Video Traffic Analysis of H.264/AVC and Extensions: Single-Layer Statistics

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I. Introduction

We examine the video traffic generated by the H.264/MPEG–4 Advanced Video Coding (H.264/AVC for brevity) standard [1], also known as H.264/MPEG-4 Part 10, and its extensions FRExt and SVC. H.264/AVC's recently developed Fidelity Range Extension (FRExt) [2] and its Scalable Video Coding extension (SVC) [3], which will be added in the near future, are expected to have a broad application domain for video transmission and storage up to high definition (HD) resolution. Indications of the growing acceptance of H.264/AVC are its recent inclusion in application standards and industry consortia specifications, such as Digital Video Broadcasting (DVB), HD-DVD, and Blu-Ray. At the same time, there is a growing share of streaming video traffic over the Internet and the introduction of IPTV over high speed access network links is ongoing, e.g., over Ethernet Passive Optical Networks (EPONs) or ADSL2+/VDSL2.

In general, video can be encoded (i) with fixed quantization scales, which results in nearly constant video quality at the expense of variable video traffic (bit rate), or (ii) with rate control, which adapts the quantization scales to keep the video bit rate nearly constant at the expense of variable video quality [4]. In order to examine the fundamental traffic characteristics of the H.264/AVC video coding standard, which does not specify a normative rate control mechanism, we focus on encodings with fixed quantization scales. An additional motivation for the focus on variable bit rate video encoded with fixed quantization scales is that the variable bit rate streams allow for statistical multiplexing gains that have the potential to improve the efficiency of video transport over communication networks [4]. The development of video network transport mechanisms that meet the strict playout deadlines of the video frames and efficiently accommodate the variability of the video traffic is a challenging problem. A wide array of video transport mechanisms have been developed, based primarily on the characteristics of MPEG-2 and MPEG-4 encoded video [5], [6]. The wide-spread adoption of the new H.264/AVC video codec standard with its extensions necessitates the careful study of the traffic characteristics of video coded with the new H.264/AVC codec. Therefore, it is necessary to examine the new video encoder's statistical characteristics and compression performance from a communication network perspective.

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We study the Main profile of the H.264/AVC encoder using long CIF resolution sequences. The High profile of the H.264 FRExt extension is studied using HD video. The study of the H.264 SVC extension focusses on the single layer video traffic characteristics of long CIF videos, i.e., although the single layer supports temporal scalability, we group the individual temporal layers in this part of the analysis. We provide a brief overview of the MPEG–4 family of video standards in Section III.

We perform a detailed analysis of elementary statistics of the video traffic. We study statistics of frame sizes, group of picture (GoP) sizes, long-range dependence properties, frame and GoP qualities, and correlations between frame sizes and qualities. We use bit rate-distortion (RD) and bit rate variability-distortion (VD) curves to compare the H.264/AVC Main profile and H.264 SVC single layer video traffic to the MPEG–4 Part 2 [7] traffic. In addition, we study several GoP structures and analyze the impact of frame size smoothing on the traffic variability. Furthermore, we study the video traffic of a long high definition (HD) video sequence encoded with H.264/AVC FRExt (High profile). For comparison, we encode the HD sequence with the MPEG–2 [8] encoder. For a definition of all statistics used in this study, we refer to [9].

All encodings presented in this study are publicly available as frame size video traces at: `http://trace.eas.asu.edu`. The detailed video traffic statistics and numerous plots are also available on this website.

II. Related Work

The traffic characterisations of MPEG-1 and MPEG-4 Part 2 [7] encoded video, examined e.g., in [9]–[14], have formed the basis for a plethora of studies addressing the challenges of modelling the video traffic, see e.g., [15]–[23], and of efficiently transporting the variable bit rate video traffic over networks to meet the playout deadlines of the video frames, see for instance [5], [6], [24]–[29]. To the best of our knowledge, the bit rate variability of H.264/AVC and SVC are for the first time examined in the present study.

Existing studies of the H.264/AVC codec and its extensions, such as [1], [2], [30], focus primarily on the rate-distortion (RD) performance, i.e., the video quality (PSNR) as function of the *average bit rate*, and typically consider only short video sequences up to a few hundred frames. In contrast, for the transport over communication networks, the traffic variability is also a key concern. Therefore, we study the *bit rate variability* as a function of the video quality or distortion, which we express in the bit rate variability-distortion (VD) curve. In order to obtain reliable and meaningful statistical estimates of the traffic variability and other properties, it is necessary to examine *long* video sequences with several thousand frames as we do in this study.

We note that for one fixed GoP pattern, a preliminary study [31] briefly compared the bit rate variability-distortion of the H.264/AVC encoder with the variability of the MPEG–4 Part 2 and MPEG–2 encoders. In contrast, in this study we comprehensively compare the H.264/AVC encoder, the H.264 SVC encoder, and the MPEG-4 Part 2 encoder for a range of GoP patterns. In addition, we compare hierarchical B frames with classical B frames, examine the impact of rate control on the traffic variability, and explore the implications of the increased variabilities on network transport in this study.

III. MPEG–4 VIDEO STANDARDS

Besides network designs, protocols and mechanisms, an important aspect of video over communication network applications, is the compression of the digital video content using video coding technologies. In this section, we briefly introduce the state-of-the-art video codecs (encoder/decoder) in the MPEG–4 family and their applications.

MPEG–4 is a family of open international standards that provide tools for the delivery of multimedia. The tools include codecs for the compression of audio and video, graphics and interactive features. MPEG–4's latest video codec is Part 10 or AVC, the Advanced Video Codec, which is also identically standardized as ITU H.264. In this text we will refer to this codec as H.264/AVC. This codec includes the latest developments in video coding. New High Definition TV (HDTV) satellite broadcasting and IPTV xDSL video services use H.264/AVC, as well as portable gaming and Internet video. H.264/AVC will also be used in video broadcasting to mobile handsets (mobile multimedia) using DVB-H, DMB, and Qualcomm's MediaFlo systems, and is specified in the HD-DVD and BluRay high-definition optical disc standards.

Since H.264/AVC can only be implemented on the latest generation of high-performance hardware and processors, for applications where hardware cost or power considerations make implementing H.264/AVC difficult, MPEG–4 Part 2 offers the Simple and Advanced Simple Profile specifications. These profiles offer good performance while using less complex encoder and decoder architectures. They are commonly used for 3G wireless videophony, digital camera, and for security or intranet video applications.

Access networks are highly heterogeneous in bandwidth capacity. Some users may have fiber-to-the-home (FTTH) access and may want to receive streaming video in HDTV quality to a big screen TV in the home. Other users may have wireless access and want to receive video in the QCIF format at a low quality (e.g., low picture quality, and low frame rate) on their PDA. Scalable video encoding technology provides these heterogeneous video qualities efficiently. The latest standardization effort addressing scalability is the extension of H.264/AVC called Scalable Video Codec (SVC).

In the following sections we will briefly introduce the following video codecs: MPEG–4 Part 2, H.264/AVC, and H.264 SVC.

A. MPEG–4 Part 2

The MPEG–4 Part 2 [7] standard contains many compression tools that are useful for many applications. However, they are not required for all applications and therefore, several profiles and levels are defined. Profiles combine tools, and levels provide a way to limit computational complexity, e.g., by specifying the bit rate.

The most used profile for streaming video is the *Simple Profile* (SP). This profile is defined for two way and very low complexity receivers, such as wireless videophones. Therefore, the tools are selected by giving priority to low delay and low complexity. SP includes the compression tools to encode I frames and P frames, 1/2 pixel motion compensation, AC/DC prediction, 4 motion vectors per macroblock (4-MV) and Unrestricted MV. Furthermore, error-resilience tools are supported. The *Simple Scalable Profile* adds B frames to this list of tools and support for temporal and spatial scalability.

The *Advanced Simple Profile* (ASP) was defined with Internet and streaming video in mind. For these applications the delay is less of an issue and the targeted platforms have high processing power. Therefore,

ASP has tools that allow to improve the quality of video over SP. For example, the ASP profile contains 1/4 pixel motion compensation, B frames, and global motion compensation.

B. H.264/AVC

H.264/AVC represents a big leap in video compression technology with typically a 50% reduction of average bit rate for a given video quality compared to MPEG–2 and about a 30% reduction compared with MPEG–4 Part 2 [32]. The encoding chain from previous standards consisting of block transform in conjunction with motion compensation and prediction is still in place, but a number of new encoding mechanisms have been added which cumulatively give a much better performance over previous standards [1].

The H.264/AVC standard defines several profiles. The *Baseline profile* is intended for low-delay applications, low processing power platforms, and for high packet loss environments. The *Main profile* encompasses all tools for achieving high coding efficiency for high bit rate applications. The *Extended profile* is meant for error-resilient streaming applications. The FREXt amendment adds four *High profiles*: High (HP), High 10 (Hi10P), High 4:2:2 (Hi422P), High 4:4:4 (Hi444P) [2], [33]. The High profile has improved tools which can result in up to 10% compression gains over the Main profile and up to 59% over MPEG–2 for High Definition video with only a marginal increase in computational complexity compared to the Main profile. Recently, five additional profiles have been added for professional applications, e.g., supporting intra-only encoding.

We proceed to briefly discuss the main new features of H.264/AVC and refer to [1] for more details. A major improvement is the introduction of the entropy coding scheme Context Adaptive Binary Arithmetic Coding (CABAC), which typically gives 10-15% bit rate savings [32] over previous variable length coding schemes used in MPEG–2/4. Since arithmetic coding is compute intensive, the main profile also supports a scheme called Context Adaptive Variable Length Coding (CAVLC), which is an improved version of older variable length coding schemes. Other new normative tools include spatial intra frame prediction which predicts a region of a given frame from other regions of the same frame, a new integer transform which significantly reduces ringing artifacts, and an adaptive in-loop deblocking filter which reduces artifacts [32]. H.264/AVC also introduces a new tool called *Variable Block sizes* which introduce a different number of square and rectangular macroblock sizes, such as (4×4), (8×8), and (16×8) pixels. These different block sizes permit selecting the optimal block size for motion compensation and prediction.

Video compression, in general, is a tradeoff in a rate-distortion (RD) sense between the removal of redundancies by the encoding tools (reducing bit rate) and the introduced visible distortion. Previous codecs worked primarily towards optimizing either one of these two goals. H.264/AVC uses Lagrangian based rate-distortion optimization to jointly optimize both goals [32]. This RD optimization can be applied to individual encoding mechanisms as well as to the entire codec. For instance, the RD optimization helps in making macroblock mode decisions, i.e., deciding whether a given macroblock should be intra coded (using the block transform) or inter coded with motion compensation and prediction from a macroblock of a different frame. Similarly, in motion compensation and prediction, the RD optimization can be used to find the optimal motion vectors. These Lagrangian RD optimizations can improve the compression

efficiency by up to 9% [32], but significantly increase the complexity of the encoding. Therefore, these optimization features may or may not be used depending on the target application.

In previous standards, one reference frame (I or P) from the past for prediction of P frame blocks was allowed, and one reference frame (I or P) from the past and one reference frame (I or P) from the future for prediction of B frame blocks were allowed, whereby the blocks from these past and future reference frames were weighted equally to form the predicted B frame block. Similarly, for prediction of a B frame block in H.264/AVC, two blocks are selected from the reference frames; however, there are two lists that each can contain *multiple* reference frames. One block is selected from a frame in each of the two reference lists and these blocks can be weighted *unequally* [34].

C. H.264 SVC

With scalable video encoding, a video is typically encoded into multiple layers, usually a base layer and one or more enhancement layers. The base layer provides a basic video quality. Adding enhancement layers improves the video quality. With layered encoding, a particular enhancement layer can only be decoded if all lower layers are provided. Layered encoding is therefore also referred to as hierarchical encoding.

The following scalability modes were already supported in the MPEG–2 standard [8], [35]: temporal scalability (even in MPEG–1), SNR or quality scalability, and spatial scalability. Although, MPEG–2 is considered an old standard, it is still the most widely deployed digital video compression standard in use today due to the popularity of the DVD and as the digital TV video coder used for TV broadcasting of SDTV and HDTV [36]. As a consequence, research is still addressing MPEG–2 scalability issues focusing on video multicasting over heterogeneous networks. Also H.263 has support for similar scalability modes. The MPEG–4 Part 2 standard [7] provides, on top of the temporal-spatial-SNR layered scalability, object–based scalability and fine-granular-scalability (FGS) [37]. FGS adds an enhancement layer enabling quasi-continuous quality scalability.

H.264/AVC does not presently support spatial or SNR scalability. H.264/AVC supports frame dropping of non-reference frames resulting in temporal scalability. The multiple reference frame concept in combination with generalized B-pictures allow for a huge flexibility on frame dependencies to be exploited for temporal scalability and rate shaping of encoded video. In addition, switching between different bit streams which are encoded at different bit rates (temporal rates and qualities) is supported. This technique is called version switching and can be applied at Instantaneous Decoder Refresh (IDR) frames, or, more efficiently by the usage of switching pictures [38], SP and SI pictures. These pictures allow identical reconstruction of frames even when different reference frames are being used. Switching pictures can also be applied for error-resilience purposes.

In the wireless video streaming scenario, the streaming server is in general aware of the current channel bit rate [39]. The transmitter can decide to send one of several pre-encoded versions of the same content taking into account the expected channel behavior. If the channel rate fluctuates only in a small range, frame dropping of non-reference frames might be sufficient resulting in well-known temporal scalability. Switching of versions can be applied to compensate large scale variations of the channel rate.

During the first half of 2007, the SVC scalability extension [3] will be added to the H.264/AVC standard that provide for temporal scalability, SNR coarse (layered) and fine-granular scalability, spatial scalability and combined spatio-temporal-SNR scalability (restricted set of spatio-temporal-SNR points can be extracted from a global scalable bit stream). The H.264 SVC scalability techniques are expected to play a crucial role in providing video services over heterogeneous networks, while earlier scalable encoders and receivers did not yet gain wide market deployment.

IV. Video Sequences, Encoding Tools, and Video Traffic Metrics

The CIF video sequences used for the encodings presented in this study are the ten minute *Sony Digital HD Video Camera Recorder* demo sequence (17682 frames at 30 frames/sec), which we refer to as *Sony Demo* sequence, the first half hour of the *Silence of the Lambs* movie (54000 frames at 30 frames/sec), the *Star Wars 4* movie (54000 frames at 30 frames/sec), and the first hour of the *Tokyo Olympics* video (133128 frames at 30 frames/sec). We also use about 30 minutes of the *NBC 12 News* (49523 frames at 30 frames/sec), including the commercials. The video sequences *Silence of the Lambs*, *Star Wars 4*, *Tokyo Olympics*, and *NBC 12 News* can respectively be described as drama/thriller, science fiction/action, sports, and news video.

The *Sony Demo* sequence is originally a high definition (HD) video sequence with 1280×720 pixels. The sequence consists of 29 scenes with complex texture and a wide range of low to high motion activity. We also use 10 minutes of the *Terminator 2* HD sequence with the same resolution. These two sequences were originally encoded in *Windows Media 9* format at very high quality (perceptually perfect). We decoded the sequence into uncompressed YUV format using the *MEncoder* tool (`http://www.mplayerhq.hu`). We also used this tool to downsample the original sequences to CIF resolution (352×288).

We employ the JM reference software (version 10.2), which is the official MPEG and ITU reference implementation, for the H.264/AVC Main profile and FREXt encodings, the MPEG–4 Part 2 *Microsoft v2.3.0* software, and the *FFmpeg* MPEG–2 implementation (`http://ffmpeg.sourceforge.net`).

We use the peak signal-to-noise ratio (PSNR) as the objective measure of the quality of a reconstructed video frame $R(x, y)$ with respect to the uncompressed video frame $F(x, y)$. The larger the difference between $R(x, y)$ and $F(x, y)$, or equivalently, the lower the quality of $R(x, y)$, the lower the PSNR value. The PSNR is expressed in decibels (dB) to accommodate the logarithmic sensitivity of the human visual system. The PSNR is typically obtained for the luminance video frame and in case of a $N_x \times N_y$ frame consisting of 8-bit pixel values, it is computed as a function of the mean squared error (MSE) as:

$$MSE = \frac{1}{N_x \cdot N_y} \sum_{x=0}^{N_x-1} \sum_{y=0}^{N_y-1} [F(x, y) - R(x, y)]^2, \tag{1}$$

$$PSNR = 10 \cdot \log_{10} \frac{255^2}{MSE}. \tag{2}$$

For a video sequence consisting of M frames encoded with a given quantization scale, we let $X_m,\ m = 1, \ldots, M$, denote the sizes (in bit) of the encoded video frames. The mean frame size of the encoded

video sequence is defined as

$$\bar{X} = \frac{1}{M} \sum_{m=1}^{M} X_m, \tag{3}$$

while the variance σ^2 (square of the standard deviation) of the frame sizes is defined as

$$\sigma^2 = \frac{1}{(M-1)} \sum_{m=1}^{M} (X_m - \bar{X})^2. \tag{4}$$

The coefficient of variation is defined as

$$CoV = \frac{\sigma}{\bar{X}} \tag{5}$$

and is widely employed as a the measure of the variability of the frame sizes, i.e., the bit rate variability of the encoded video. Plotting the CoV as a function of the quantization scale (or equivalently, the PSNR video quality) gives the rate variability-distortion (VD) curve [14].

V. H.264/AVC VERSUS MPEG–4 PART 2

1) Encoding Setup: We first study the bit rate variability-distortion relationship of the H.264/AVC encoder using the Main profile. We chose the H.264/AVC encoder settings such that the bit rate-distortion is optimized and we compare the resulting bit rate variability with that of the MPEG–4 Part 2 encoder using the Advanced Simple profile. We will show that the rate variability of H.264/AVC is substantially higher. The reason for this increase is the improved compression performance, and in particular the improved temporal prediction. When we disable key new H.264/AVC motion prediction and optimization tools, we observe a sharp drop in rate variability.

For the initial bit rate variability-distortion comparison between H.264/AVC and MPEG–4 Part 2, encodings over a large bit rate range are presented with both encoders for the *Sony Demo* and *Silence of the Lambs* sequences. We employed the H.264/AVC encoder in the Main profile with all compression tools enabled, as specified in Section III-B, i.e., using variable block sizes, three reference frames for the past and the future, referenced B frames, P and B frame weighted prediction, CABAC, and rate-distortion optimization (RDO). We designate these settings by "Full-RDO". We also encoded without the rate-distortion optimization enabled and we designate these settings by "Full-noRDO".

We used the MPEG–4 Part 2 encoder (ISO/IEC JTC 1/SC 29/WG 11 N2802, Information Technology—Generic Coding of Audio-Visual Objects—Part 2: Visual, Final Proposed Draft Amendment 1, July 1999) in the *Advanced Simple* profile (ASP) to encode the two sequences, for comparison with the H.264/AVC encodings. This ASP profile adds B frames to the *Simple* profile, as well as quarter pixel (sample) accurate motion compensated prediction (Qpel). Quarter pixel motion compensated prediction refines motion vectors that are estimated with half pixel accuracy in the Simple profile to quarter pixel accuracy. Half (resp. quarter) pixel accurate motion compensation prediction allows motion vectors to point to blocks that are offset (interpolated) by a half-pixel (resp. quarter pixel) distance from the pixels of a reference video frame. We do not employ rate distortion optimization with this encoder and we refer to these settings with "ASP-Qpel". The settings without *Qpel* are designated "ASP-noQpel" and employ half pixel accuracy in

the motion compensated prediction. The MPEG–4 Part 2 encoder with both the ASP-noQPel and ASP-QPel settings uses one reference frame for the past and one for the future, and 16×16 blocks for motion estimation that can be split into 8×8 blocks.

We also switched off some key new H.264/AVC motion compensated prediction tools and we refer to these encoding settings as "Sparse". The Sparse results are obtained with the CAVLC entropy coder, only one reference frame for the past and the future, only block sizes 16×16 and 8×8 are used, no referenced B frames, no weighted prediction and no RDO. We distinguish two Sparse encodings settings: with quarter pixel accurate motion compensated prediction, denoted by "Sparse-Qpel", and without quarter pixel accurate motion compensated prediction, denoted by "Sparse-noQpel", which employs full pixel accuracy.

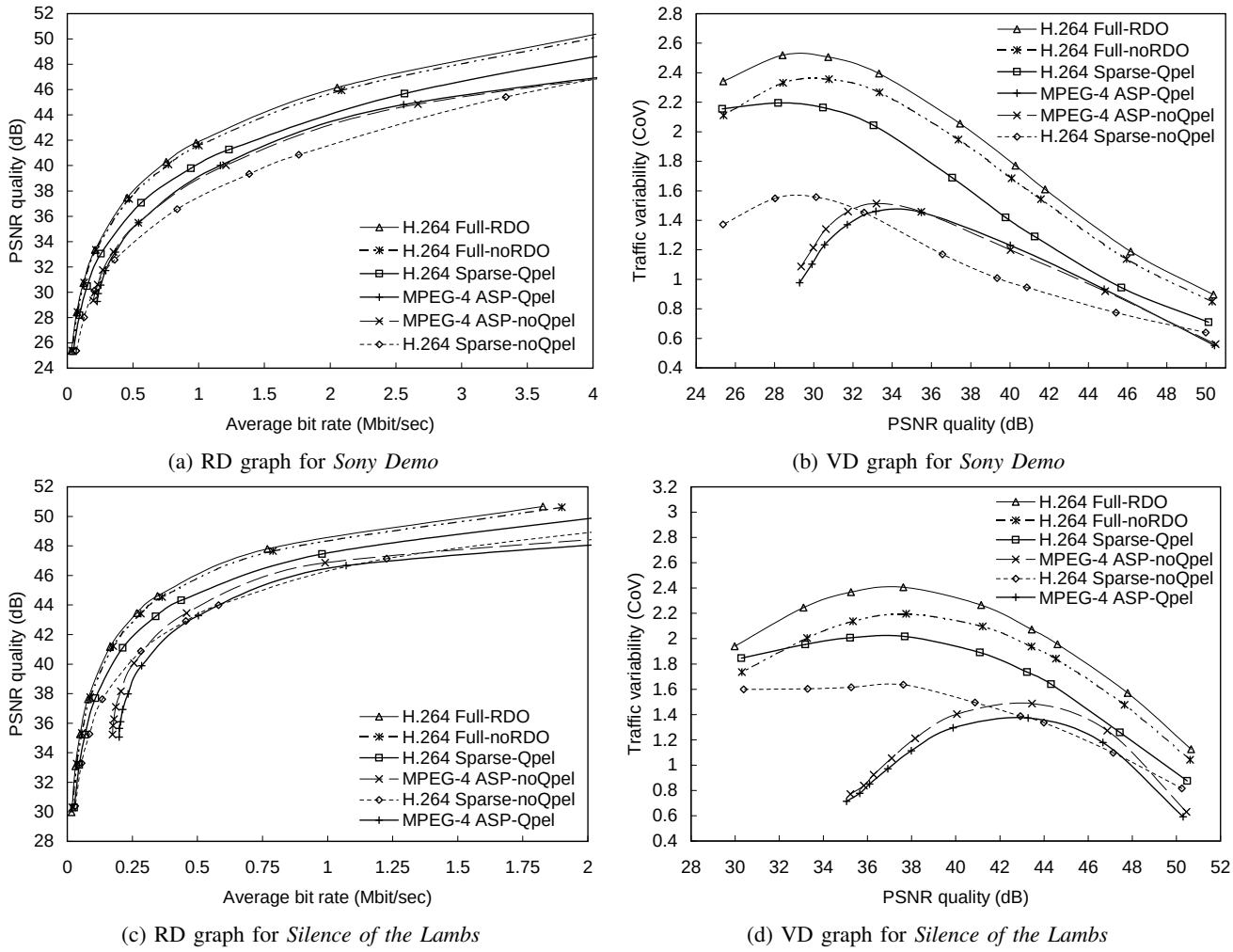
For all these encodings, the GoP structure is set to *IBBPBBPBBPBB* (12 frames, with 2 B frames per I/P frame) and we denote this GoP structure by *G12-B2*.

A. Results and Discussion

The RD graphs obtained for the CIF resolution *Sony Demo* and *Silence of the Lambs* sequences are depicted in Figs. 1(a) and (c). We observe that the RD results for the H.264/AVC encoder with "Full-RDO" settings are a clear improvement over MPEG–4 Part 2 encoder's "ASP-Qpel". Furthermore, we also provide the H.264/AVC "Full-noRDO" curve since this results in a fairer comparison with "ASP-Qpel". When the RDO feature is not used, the H.264/AVC encoder still outperforms the "ASP-Qpel" by a large bit rate margin. Overall, the bit rate savings vary roughly from more than 50% in the low quality range to more than 30% in the high quality range for these two sequences.

The RD properties of both encoders have already been elaborately studied, e.g., in [40]. Conversely, the focus of this study is on the bit rate variability of the respective encoders. Therefore, we depict corresponding VD graphs in Figs. 1(b) and (d). We observe that the bit rate variability is significantly higher for the H.264/AVC ("Full-RDO" options) than for the MPEG–4 Part 2 encoder ("ASP-Qpel"), especially in the low to medium quality range. Even when RDO is not used, the rate variability is still significantly higher with the H.264/AVC codec.

We ask ourselves where this substantial difference in variability stems from and we find that the improvements and new motion compensated prediction tools of H.264/AVC are mainly responsible. We demonstrate this with two hypothetical encoding experiments, i.e., we switch off H.264/AVC tools: these are the "Sparse-Qpel" and "Sparse-noQpel" RD and VD curves in the respective figures. The idea is to employ comparable motion compensated prediction tools for both encoders, i.e., similar variable block sizes, pixel accuracy in motion compensated prediction, and number of reference frames. The "Sparse-Qpel" RD curve represents a significant drop in RD efficiency compared to the "Full" curves, but is still a large improvement over the "ASP-Qpel" RD curve. When quarter pixel accurate motion compensated prediction is also switched off and full pixel accuracy is used ("Sparse-noQpel"), the RD efficiency drastically drops even below the "ASP-Qpel" curve. The "ASP-noQpel" RD curve is not much different from the "ASP-Qpel" RD curve, since still half pixel accurate motion compensated prediction is used, which we are not able to switch off in the MPEG-4 Part 2 encoder software that we use. Conversely, the H.264/AVC encoder supports either quarter pixel or full pixel accuracy. The results do show that MPEG-4



(a) RD graph for *Sony Demo*

(b) VD graph for *Sony Demo*

(c) RD graph for *Silence of the Lambs*

(d) VD graph for *Silence of the Lambs*

Fig. 1. Rate-Distortion (RD) and Rate Variability-Distortion (VD) characteristics.

Part 2 quarter pixel accuracy results in slightly improved RD efficiency for the higher bit rates and slightly worse efficiency for the lower bit rates. This illustrates the importance of these improved compression tools of H.264/AVC for outperforming the MPEG-4 Part 2 encoder.

Turning to the VD curves, we observe a sharp drop of the rate variability for the H.264/AVC encoder when using the "Sparse-Qpel" and "Sparse-noQpel" settings. The maximum variability of the latter is comparable to the maximum of the MPEG-4 VD curves. The reason for this large difference in rate variability is therefore the improved compression performance of the H.264/AVC encoder. Especially the improved motion compensated prediction results generally in smaller P- and B-frames compared to the MPEG–4 Part 2 encoder's. Since the compression improvement of the I-frames (due to spatial intra prediction) is relatively smaller, the combination of all compression tool improvements results in the observed higher bit rate variability for the H.264/AVC encoder. Due to space restrictions on the plots, we are not able to show the impact of switching off intra prediction. It results in an increased rate variability since the I frame sizes increase compared to the other frame types.

When comparing the RD and VD curves of the above encoding settings for both encoders, there

appears to be a direct relationship between increasing the RD efficiency by improving motion compensated prediction tools and the increase in rate variability. This is particularly clear for the "ASP-Qpel" and "ASP-noQpel" RD and VD curves. Even the slight RD curve differences are represented by VD curve differences but somewhat amplified.

In this section, we illustrated the profound impact of the improved compression tools on the bit rate-distortion and bit rate variability-distortion. In subsequent experiments with the H.264/AVC Main profile encodings, we apply the "Full-RDO" encoding options as described above. For the MPEG–4 Part 2 encodings, we employ the "ASP-noQpel" settings since there are only relatively small bit rate savings (if any) associated with quarter pixel accuracy, while the encoding times are increased.

VI. Frame Size and GoP Size Statistics

A. Encoding Setup

In the subsequent experiments, we employ four different GoP structures for all CIF sequence encodings with all three video encoders. The GoP structures are *IBPBPBPBPBPBPBPB* (16 frames, with 1 B frame per I/P frame), which we denote by *G16-B1*, *IBBBPBBBPBBBPBBB* (16 frames, with 3 B frames per I/P frame) or *G16-B3*, *IBBBBBBBPBBBBBBB* (16 frames, with 7 B frames per I/P frame) or *G16-B7*, and *IBBBBBBBBBBBBBBB* (16 frames, with 15 B frames per I frame) or *G16-B15*.

B. Results and Discussion

Video traffic frame size and GoP size statistics are available in table format in Appendix I and Appendix II respectively. The tables in Appendix I contain the compression ratio, mean frame size, coefficient of variation and peak-to-mean of frame sizes, and mean bit rate as well as the peak bit rate, for each encoding (sequence name, GoP structure and quantization parameter). The tables in Appendix II contain similar statistics for the GoP sizes.

In this section, we summarize key statistics in Tables I- III. For each GoP structure, encoder and selected quantization scales, we provide minimum, mean, and maximum values of the traffic statistics, computed over all five sequences. In the first column of each table the encoding mode is specified as follows: first the GoP structure as, e.g., *G16B3*, followed by a code representing the employed encoder (*F* for H.264/AVC, *SV* for H.264 SVC, and *Mp* for MPEG–4 Part 2), and ending with the quantization scale.

TABLE I: Overview of frame size, GoP size, bit rate, and quality statistics of single–layer encodings with H.264/AVC.

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B1F10	Min	5.224	7.292	0.337	3.032	1.750	12.571	0.196	1.692	49.019	0.026
G16B1F10	Mean	12.893	15.236	0.803	6.616	3.657	20.243	0.431	3.085	50.666	0.049
G16B1F10	Max	20.853	29.108	1.101	10.365	6.986	24.996	0.640	4.939	51.738	0.071
G16B1F16	Min	11.376	3.098	0.583	4.220	0.743	7.551	0.337	2.355	44.042	0.029
G16B1F16	Mean	29.918	6.966	1.107	9.572	1.672	12.833	0.585	4.500	46.583	0.058
G16B1F16	Max	49.090	13.368	1.551	16.676	3.208	15.732	0.922	8.132	48.314	0.079
G16B1F22	Min	30.722	1.361	0.978	7.279	0.327	4.541	0.523	2.796	40.292	0.032
G16B1F22	Mean	68.018	2.907	1.450	14.330	0.698	8.363	0.702	5.996	42.918	0.070
G16B1F22	Max	111.724	4.950	1.933	26.107	1.188	10.466	1.063	11.290	44.776	0.093
G16B1F24	Min	43.009	1.041	1.123	8.766	0.250	3.685	0.532	2.783	39.118	0.036
G16B1F24	Mean	89.470	2.167	1.564	16.234	0.520	7.215	0.722	6.416	41.656	0.075

TABLE I: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B1F24	Max	146.005	3.536	2.046	29.609	0.849	9.041	1.084	12.189	43.548	0.098
G16B1F28	Min	76.918	0.633	1.372	11.450	0.152	2.508	0.528	2.950	36.921	0.044
G16B1F28	Mean	148.477	1.275	1.763	19.961	0.306	5.350	0.738	7.018	39.280	0.086
G16B1F28	Max	240.138	1.977	2.233	36.345	0.474	6.650	1.101	13.536	41.295	0.109
G16B1F34	Min	171.039	0.306	1.657	15.688	0.073	1.537	0.510	2.982	33.380	0.055
G16B1F34	Mean	312.480	0.589	1.976	25.092	0.141	3.206	0.715	7.645	35.631	0.101
G16B1F34	Max	496.635	0.889	2.363	42.608	0.213	4.155	1.046	14.444	37.815	0.131
G16B1F38	Min	287.459	0.190	1.684	18.443	0.046	1.030	0.501	2.919	30.860	0.063
G16B1F38	Mean	511.503	0.352	2.020	26.828	0.085	2.103	0.678	7.686	33.193	0.108
G16B1F38	Max	798.554	0.529	2.465	42.762	0.127	2.674	0.960	14.082	35.443	0.146
G16B1F42	Min	473.250	0.121	1.658	20.861	0.029	0.708	0.492	2.788	28.478	0.069
G16B1F42	Mean	818.792	0.215	1.999	27.057	0.052	1.328	0.628	7.324	30.880	0.120
G16B1F42	Max	1251.794	0.321	2.486	39.069	0.077	1.609	0.845	12.560	33.269	0.158
G16B1F48	Min	1016.144	0.064	1.555	17.859	0.015	0.415	0.453	2.563	24.872	0.079
G16B1F48	Mean	1626.575	0.104	1.845	23.606	0.025	0.574	0.535	5.755	27.514	0.139
G16B1F48	Max	2368.749	0.150	2.272	28.366	0.036	0.841	0.640	8.911	29.986	0.187
G16B3F10	Min	5.513	6.784	0.345	3.291	1.628	12.714	0.209	1.742	48.516	0.026
G16B3F10	Mean	13.513	14.709	0.806	6.948	3.530	20.432	0.467	3.302	50.220	0.051
G16B3F10	Max	22.415	27.584	1.133	11.066	6.620	24.987	0.720	5.830	51.425	0.073
G16B3F16	Min	12.312	2.947	0.611	4.805	0.707	7.843	0.364	2.469	43.564	0.029
G16B3F16	Mean	31.325	6.595	1.135	10.201	1.583	13.091	0.622	4.771	46.214	0.060
G16B3F16	Max	51.596	12.351	1.606	17.641	2.964	15.898	0.982	9.329	48.120	0.082
G16B3F22	Min	33.566	1.296	1.057	7.994	0.311	4.585	0.546	2.814	39.918	0.034
G16B3F22	Mean	71.524	2.718	1.523	15.216	0.652	8.415	0.731	6.338	42.650	0.072
G16B3F22	Max	117.303	4.530	2.016	27.627	1.087	10.514	1.108	12.798	44.621	0.097
G16B3F24	Min	46.500	0.992	1.205	9.525	0.238	3.743	0.538	2.908	38.796	0.038
G16B3F24	Mean	94.144	2.030	1.651	17.269	0.487	7.266	0.747	6.808	41.416	0.077
G16B3F24	Max	153.328	3.270	2.140	31.319	0.785	9.092	1.127	13.809	43.374	0.102
G16B3F28	Min	83.141	0.601	1.478	12.474	0.144	2.520	0.522	3.053	36.630	0.046
G16B3F28	Mean	156.962	1.191	1.877	21.301	0.286	5.387	0.749	7.401	39.047	0.088
G16B3F28	Max	252.882	1.829	2.345	38.578	0.439	6.687	1.130	15.060	41.114	0.111
G16B3F34	Min	184.854	0.287	1.767	17.190	0.069	1.554	0.502	3.020	33.131	0.058
G16B3F34	Mean	332.811	0.550	2.124	27.046	0.132	3.239	0.713	7.894	35.377	0.103
G16B3F34	Max	529.695	0.823	2.547	45.991	0.197	4.183	1.053	15.459	37.598	0.132
G16B3F38	Min	308.086	0.178	1.810	19.962	0.043	1.041	0.498	2.863	30.648	0.065
G16B3F38	Mean	544.005	0.331	2.170	28.957	0.079	2.129	0.671	7.869	32.936	0.111
G16B3F38	Max	854.575	0.494	2.667	46.594	0.118	2.710	0.953	14.833	35.216	0.148
G16B3F42	Min	508.817	0.112	1.820	22.606	0.027	0.710	0.477	2.748	28.216	0.072
G16B3F42	Mean	876.605	0.201	2.161	29.443	0.048	1.347	0.615	7.177	30.608	0.124
G16B3F42	Max	1353.831	0.299	2.682	43.242	0.072	1.621	0.818	12.301	33.057	0.161
G16B3F48	Min	1122.126	0.059	1.764	20.121	0.014	0.415	0.425	2.575	24.603	0.084
G16B3F48	Mean	1760.446	0.095	2.023	25.870	0.023	0.579	0.501	5.216	27.294	0.144
G16B3F48	Max	2555.718	0.136	2.485	31.429	0.033	0.846	0.573	7.997	29.911	0.191
G16B7F10	Min	5.542	6.940	0.330	3.396	1.666	12.156	0.217	1.843	48.274	0.025
G16B7F10	Mean	13.093	15.076	0.753	6.686	3.618	20.415	0.487	3.442	49.974	0.051
G16B7F10	Max	21.912	27.440	1.070	10.850	6.586	24.289	0.760	6.052	51.216	0.074
G16B7F16	Min	12.265	3.103	0.581	4.898	0.745	7.718	0.370	2.458	43.349	0.027
G16B7F16	Mean	29.943	6.821	1.068	9.804	1.637	13.179	0.642	4.870	46.003	0.060
G16B7F16	Max	49.009	12.398	1.527	17.082	2.975	15.669	1.015	9.584	47.946	0.084
G16B7F22	Min	32.846	1.377	1.019	7.957	0.331	4.700	0.572	2.880	39.691	0.035
G16B7F22	Mean	67.597	2.853	1.443	14.616	0.685	8.549	0.757	6.450	42.473	0.073
G16B7F22	Max	110.425	4.630	1.927	26.436	1.111	10.670	1.142	13.099	44.482	0.099
G16B7F24	Min	45.165	1.051	1.162	9.444	0.252	3.843	0.566	2.951	38.588	0.038
G16B7F24	Mean	88.995	2.134	1.572	16.632	0.512	7.399	0.774	6.925	41.250	0.078
G16B7F24	Max	144.642	3.367	2.057	30.149	0.808	9.235	1.166	14.193	43.218	0.104
G16B7F28	Min	80.668	0.634	1.433	12.392	0.152	2.562	0.537	3.090	36.433	0.047
G16B7F28	Mean	149.336	1.244	1.810	20.694	0.298	5.501	0.775	7.554	38.864	0.088
G16B7F28	Max	239.732	1.885	2.271	37.482	0.452	6.830	1.168	15.557	40.905	0.113
G16B7F34	Min	181.065	0.297	1.668	17.187	0.071	1.584	0.510	3.116	32.944	0.059
G16B7F34	Mean	321.118	0.568	2.088	26.852	0.136	3.331	0.735	8.113	35.164	0.104
G16B7F34	Max	511.682	0.840	2.571	46.059	0.202	4.309	1.086	15.938	37.295	0.132
G16B7F38	Min	300.906	0.182	1.736	20.028	0.044	1.065	0.499	3.005	30.514	0.066
G16B7F38	Mean	526.524	0.342	2.149	29.034	0.082	2.204	0.690	8.155	32.697	0.113
G16B7F38	Max	834.409	0.505	2.683	47.530	0.121	2.820	0.981	15.191	34.960	0.148
G16B7F42	Min	501.838	0.113	1.794	23.062	0.027	0.736	0.496	2.832	28.011	0.074
G16B7F42	Mean	859.784	0.206	2.169	30.302	0.049	1.412	0.632	7.544	30.303	0.127

TABLE I: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B7F42	Max	1347.116	0.303	2.725	45.446	0.073	1.709	0.844	12.879	32.664	0.162
G16B7F48	Min	1154.515	0.057	1.811	22.835	0.014	0.438	0.440	2.788	24.298	0.089
G16B7F48	Mean	1789.926	0.093	2.085	28.156	0.022	0.622	0.519	5.351	26.950	0.151
G16B7F48	Max	2648.509	0.132	2.550	34.381	0.032	0.893	0.582	8.042	29.620	0.198
G16B15F10	Min	5.457	7.618	0.307	3.150	1.828	11.485	0.223	1.799	48.153	0.024
G16B15F10	Mean	12.105	15.947	0.680	6.148	3.827	20.204	0.492	3.409	49.834	0.051
G16B15F10	Max	19.960	27.866	0.974	10.132	6.688	24.664	0.762	5.950	51.079	0.075
G16B15F16	Min	11.823	3.442	0.529	4.344	0.826	7.864	0.368	2.410	43.253	0.027
G16B15F16	Mean	27.179	7.364	0.959	9.004	1.767	13.144	0.645	4.678	45.859	0.060
G16B15F16	Max	44.176	12.862	1.387	15.743	3.087	16.001	1.014	8.943	47.746	0.085
G16B15F22	Min	30.526	1.554	0.924	7.559	0.373	4.818	0.571	2.997	39.546	0.035
G16B15F22	Mean	60.018	3.181	1.289	13.233	0.763	8.705	0.767	6.178	42.309	0.072
G16B15F22	Max	97.844	4.982	1.742	23.859	1.196	10.855	1.143	11.942	44.224	0.100
G16B15F24	Min	41.489	1.189	1.051	8.860	0.285	3.945	0.609	3.167	38.441	0.039
G16B15F24	Mean	78.631	2.399	1.404	15.007	0.576	7.544	0.790	6.679	41.079	0.077
G16B15F24	Max	127.886	3.665	1.862	27.245	0.880	9.408	1.170	12.995	43.008	0.105
G16B15F28	Min	73.177	0.714	1.285	11.566	0.171	2.610	0.585	3.370	36.261	0.047
G16B15F28	Mean	132.378	1.400	1.624	18.772	0.336	5.632	0.800	7.393	38.636	0.088
G16B15F28	Max	213.120	2.078	2.068	34.253	0.499	6.999	1.179	14.487	40.620	0.114
G16B15F34	Min	165.454	0.328	1.474	16.192	0.079	1.633	0.547	3.574	32.694	0.059
G16B15F34	Mean	289.670	0.629	1.917	24.976	0.151	3.432	0.773	8.011	34.835	0.103
G16B15F34	Max	463.795	0.919	2.417	43.322	0.221	4.418	1.120	15.564	36.904	0.128
G16B15F38	Min	278.300	0.198	1.547	19.248	0.047	1.105	0.534	3.607	30.198	0.066
G16B15F38	Mean	481.370	0.374	2.007	27.748	0.090	2.300	0.732	8.304	32.294	0.112
G16B15F38	Max	769.931	0.546	2.582	46.424	0.131	2.939	1.026	15.172	34.569	0.147
G16B15F42	Min	477.477	0.118	1.637	22.756	0.028	0.755	0.521	3.379	27.610	0.074
G16B15F42	Mean	805.772	0.220	2.069	29.983	0.053	1.486	0.673	7.717	29.788	0.127
G16B15F42	Max	1285.255	0.318	2.669	46.765	0.076	1.809	0.896	13.215	32.081	0.162
G16B15F48	Min	1148.458	0.056	1.719	23.460	0.013	0.392	0.482	3.076	23.785	0.091
G16B15F48	Mean	1775.265	0.095	2.067	29.908	0.023	0.673	0.569	5.717	26.330	0.156
G16B15F48	Max	2715.675	0.132	2.585	38.361	0.032	0.955	0.638	8.561	28.858	0.204

TABLE II: Overview of frame size, GoP size, bit rate, and quality statistics of single–layer encodings with H.264 SVC.

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B1SV10	Min	4.708	8.975	0.354	2.433	2.154	11.971	0.171	1.599	50.431	0.041
G16B1SV10	Mean	10.689	17.488	0.763	4.903	4.197	17.733	0.371	2.673	52.076	0.058
G16B1SV10	Max	16.942	32.297	0.990	7.271	7.751	21.559	0.510	4.000	52.862	0.080
G16B1SV16	Min	9.407	3.624	0.562	3.520	0.870	8.120	0.276	2.070	45.295	0.043
G16B1SV16	Mean	25.060	8.330	1.049	8.205	1.999	12.961	0.533	4.023	47.679	0.060
G16B1SV16	Max	41.960	16.165	1.438	14.348	3.880	16.026	0.852	7.170	49.224	0.078
G16B1SV22	Min	23.489	1.640	0.894	5.990	0.394	4.973	0.444	2.699	41.169	0.036
G16B1SV22	Mean	56.053	3.634	1.368	12.635	0.872	8.983	0.664	5.518	43.888	0.069
G16B1SV22	Max	92.735	6.474	1.843	23.224	1.554	11.247	1.041	10.361	45.663	0.092
G16B1SV24	Min	32.731	1.265	1.014	7.211	0.304	4.070	0.500	2.713	39.996	0.037
G16B1SV24	Mean	72.963	2.732	1.462	14.237	0.656	7.786	0.695	5.978	42.664	0.073
G16B1SV24	Max	120.221	4.646	1.942	26.204	1.115	9.762	1.070	11.271	44.470	0.096
G16B1SV28	Min	59.896	0.770	1.237	9.668	0.185	2.719	0.540	2.711	37.736	0.042
G16B1SV28	Mean	120.759	1.597	1.631	17.457	0.383	5.771	0.730	6.703	40.236	0.082
G16B1SV28	Max	197.490	2.539	2.111	32.201	0.609	7.199	1.103	12.847	42.182	0.106
G16B1SV34	Min	136.196	0.371	1.500	13.537	0.089	1.652	0.528	2.844	34.202	0.053
G16B1SV34	Mean	255.175	0.729	1.827	22.220	0.175	3.474	0.729	7.500	36.567	0.097
G16B1SV34	Max	409.419	1.117	2.251	38.615	0.268	4.483	1.084	14.312	38.685	0.128
G16B1SV38	Min	223.295	0.235	1.598	15.965	0.056	1.180	0.517	2.995	31.630	0.061
G16B1SV38	Mean	408.143	0.446	1.900	24.282	0.107	2.379	0.703	7.798	34.072	0.085
G16B1SV38	Max	648.030	0.681	2.269	39.799	0.163	3.031	1.020	14.447	36.207	0.118
G16B1SV42	Min	370.328	0.147	1.543	18.041	0.035	0.807	0.511	3.079	29.132	0.069
G16B1SV42	Mean	662.155	0.269	1.867	24.654	0.065	1.490	0.657	7.702	31.600	0.103
G16B1SV42	Max	1036.452	0.411	2.318	37.269	0.099	1.790	0.902	13.494	33.983	0.134
G16B1SV48	Min	762.564	0.079	1.404	17.873	0.019	0.528	0.476	3.046	25.661	0.078
G16B1SV48	Mean	1283.681	0.134	1.695	22.791	0.032	0.702	0.570	6.810	28.030	0.096

TABLE II: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B1SV48	Max	1931.974	0.199	2.120	27.964	0.048	0.953	0.690	10.177	30.483	0.114
G16B3SV10	Min	4.864	8.716	0.424	2.786	2.092	13.473	0.175	1.634	50.136	0.055
G16B3SV10	Mean	11.085	16.861	0.905	5.639	4.047	19.609	0.363	2.731	52.045	0.068
G16B3SV10	Max	17.447	31.265	1.194	8.384	7.504	23.670	0.491	4.126	53.109	0.092
G16B3SV16	Min	9.870	3.687	0.692	4.158	0.885	9.385	0.283	2.113	45.044	0.054
G16B3SV16	Mean	25.290	8.027	1.241	9.358	1.927	14.522	0.513	3.982	47.776	0.068
G16B3SV16	Max	41.240	15.406	1.649	15.949	3.698	17.859	0.791	7.039	49.654	0.086
G16B3SV22	Min	24.474	1.675	1.119	7.190	0.402	5.988	0.430	2.618	41.107	0.046
G16B3SV22	Mean	55.819	3.537	1.623	14.529	0.849	10.277	0.624	5.330	44.224	0.073
G16B3SV22	Max	90.772	6.213	2.085	25.779	1.491	12.834	0.960	9.969	46.273	0.096
G16B3SV24	Min	33.691	1.291	1.244	8.559	0.310	4.943	0.479	2.611	40.082	0.043
G16B3SV24	Mean	72.598	2.678	1.729	16.420	0.643	8.944	0.654	5.762	43.138	0.076
G16B3SV24	Max	117.819	4.513	2.197	29.304	1.083	11.219	0.997	10.868	45.189	0.098
G16B3SV28	Min	60.191	0.810	1.499	11.489	0.194	3.350	0.499	2.606	38.118	0.046
G16B3SV28	Mean	116.849	1.616	1.922	19.987	0.388	6.780	0.680	6.289	40.979	0.082
G16B3SV28	Max	187.668	2.526	2.378	35.844	0.606	8.504	1.021	11.943	43.088	0.104
G16B3SV34	Min	131.208	0.406	1.773	15.427	0.097	1.993	0.499	2.650	35.000	0.053
G16B3SV34	Mean	235.991	0.779	2.108	24.919	0.187	4.187	0.684	6.787	37.429	0.091
G16B3SV34	Max	374.488	1.159	2.521	43.248	0.278	5.333	1.008	12.726	39.534	0.120
G16B3SV38	Min	214.880	0.252	1.856	17.893	0.060	1.378	0.495	2.783	32.625	0.059
G16B3SV38	Mean	382.096	0.475	2.154	27.222	0.114	2.835	0.667	6.990	34.939	0.091
G16B3SV38	Max	603.233	0.708	2.558	45.136	0.170	3.643	0.965	12.747	37.205	0.117
G16B3SV42	Min	338.892	0.161	1.823	19.924	0.039	0.957	0.483	2.810	30.191	0.066
G16B3SV42	Mean	598.676	0.299	2.149	28.039	0.072	1.870	0.636	6.846	32.565	0.099
G16B3SV42	Max	941.786	0.449	2.630	43.998	0.108	2.312	0.884	11.984	34.933	0.129
G16B3SV48	Min	680.158	0.085	1.678	22.060	0.020	0.578	0.450	2.851	26.668	0.075
G16B3SV48	Mean	1173.485	0.148	1.984	26.562	0.036	0.899	0.567	6.335	29.115	0.115
G16B3SV48	Max	1796.696	0.224	2.486	36.131	0.054	1.184	0.705	9.848	31.637	0.150
G16B7SV10	Min	5.048	7.902	0.415	3.012	1.897	14.022	0.182	1.671	49.845	0.051
G16B7SV10	Mean	12.042	15.907	0.936	6.352	3.818	20.384	0.385	2.901	51.761	0.067
G16B7SV10	Max	19.243	30.124	1.258	9.790	7.230	24.577	0.543	4.555	52.897	0.096
G16B7SV16	Min	10.525	3.450	0.701	4.646	0.828	9.942	0.301	2.214	44.765	0.049
G16B7SV16	Mean	27.186	7.492	1.320	10.557	1.798	15.203	0.523	4.187	47.646	0.068
G16B7SV16	Max	44.081	14.447	1.781	18.142	3.467	18.649	0.800	7.492	49.704	0.093
G16B7SV22	Min	27.052	1.550	1.202	8.407	0.372	6.423	0.458	2.666	40.900	0.045
G16B7SV22	Mean	60.604	3.223	1.773	16.703	0.774	10.838	0.630	5.596	44.214	0.074
G16B7SV22	Max	98.090	5.621	2.271	29.389	1.349	13.500	0.953	10.484	46.512	0.101
G16B7SV24	Min	36.758	1.216	1.366	10.051	0.292	5.448	0.483	2.620	39.954	0.044
G16B7SV24	Mean	77.524	2.475	1.905	18.895	0.594	9.589	0.651	5.955	43.196	0.077
G16B7SV24	Max	125.051	4.137	2.401	33.272	0.993	11.984	0.980	11.285	45.420	0.104
G16B7SV28	Min	65.492	0.770	1.658	13.386	0.185	3.667	0.472	2.634	38.119	0.047
G16B7SV28	Mean	124.559	1.494	2.122	22.830	0.359	7.234	0.663	6.407	41.089	0.083
G16B7SV28	Max	197.359	2.322	2.580	40.091	0.557	9.076	0.988	12.125	43.304	0.109
G16B7SV34	Min	139.560	0.396	1.974	17.596	0.095	2.167	0.472	2.654	35.211	0.054
G16B7SV34	Mean	245.482	0.741	2.326	28.094	0.178	4.525	0.657	6.725	37.739	0.091
G16B7SV34	Max	383.789	1.090	2.739	48.047	0.262	5.719	0.964	12.480	39.938	0.117
G16B7SV38	Min	218.668	0.256	2.053	20.089	0.061	1.544	0.475	2.800	33.095	0.059
G16B7SV38	Mean	381.043	0.473	2.379	30.631	0.114	3.188	0.639	6.725	35.452	0.103
G16B7SV38	Max	594.255	0.695	2.859	50.647	0.167	4.110	0.921	12.082	37.712	0.132
G16B7SV42	Min	344.046	0.163	2.000	22.041	0.039	1.044	0.463	2.876	30.612	0.065
G16B7SV42	Mean	599.277	0.298	2.343	31.352	0.071	2.083	0.612	6.527	32.994	0.101
G16B7SV42	Max	933.813	0.442	2.880	49.459	0.106	2.632	0.851	11.208	35.265	0.147
G16B7SV48	Min	664.779	0.087	1.867	23.974	0.021	0.649	0.432	2.831	27.156	0.073
G16B7SV48	Mean	1142.195	0.152	2.192	29.817	0.037	1.038	0.555	5.955	29.426	0.096
G16B7SV48	Max	1754.461	0.229	2.760	40.878	0.055	1.316	0.697	8.948	31.928	0.120
G16B15SV10	Min	4.971	7.959	0.418	3.253	1.910	15.570	0.181	1.670	50.058	0.058
G16B15SV10	Mean	11.877	16.152	0.942	6.869	3.876	22.330	0.388	2.909	51.979	0.074
G16B15SV10	Max	19.105	30.589	1.259	10.540	7.341	26.799	0.547	4.562	53.044	0.104
G16B15SV16	Min	10.370	3.427	0.703	5.074	0.822	11.202	0.302	2.227	44.863	0.049
G16B15SV16	Mean	27.140	7.568	1.364	11.676	1.816	16.824	0.529	4.258	47.743	0.068
G16B15SV16	Max	44.379	14.664	1.861	20.160	3.519	20.543	0.814	7.686	49.795	0.096
G16B15SV22	Min	26.996	1.567	1.251	9.528	0.376	7.575	0.472	2.674	40.966	0.046
G16B15SV22	Mean	60.080	3.240	1.892	18.820	0.778	12.267	0.632	5.681	44.431	0.075
G16B15SV22	Max	97.041	5.633	2.439	32.841	1.352	15.218	0.948	10.686	46.866	0.106
G16B15SV24	Min	37.381	1.216	1.456	11.588	0.292	6.406	0.481	2.675	39.965	0.045
G16B15SV24	Mean	77.872	2.450	2.058	21.480	0.588	10.815	0.652	6.091	43.388	0.078

TABLE II: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B15SV24	Max	125.064	4.068	2.598	37.374	0.976	13.474	0.971	11.527	45.802	0.110
G16B15SV28	Min	66.228	0.781	1.819	15.746	0.187	4.531	0.459	2.639	38.259	0.048
G16B15SV28	Mean	123.655	1.494	2.333	26.418	0.359	8.392	0.659	6.528	41.415	0.084
G16B15SV28	Max	194.699	2.296	2.829	45.579	0.551	10.524	0.974	12.381	43.712	0.116
G16B15SV34	Min	139.496	0.411	2.193	20.707	0.099	2.517	0.451	2.521	35.618	0.056
G16B15SV34	Mean	239.866	0.754	2.592	32.459	0.181	5.339	0.641	6.719	38.258	0.095
G16B15SV34	Max	369.869	1.090	3.103	55.639	0.262	6.635	0.941	12.459	40.586	0.121
G16B15SV38	Min	217.919	0.268	2.251	23.469	0.064	1.816	0.460	2.439	33.606	0.060
G16B15SV38	Mean	369.830	0.486	2.654	35.414	0.117	3.787	0.620	6.568	36.001	0.102
G16B15SV38	Max	567.965	0.698	3.231	58.502	0.167	4.855	0.893	11.783	38.306	0.125
G16B15SV42	Min	334.204	0.175	2.230	25.525	0.042	1.257	0.448	2.395	31.426	0.065
G16B15SV42	Mean	567.396	0.314	2.633	36.694	0.075	2.564	0.591	6.188	33.722	0.103
G16B15SV42	Max	871.274	0.455	3.252	58.425	0.109	3.287	0.824	10.513	36.029	0.124
G16B15SV48	Min	628.439	0.094	2.105	27.536	0.022	0.709	0.411	2.465	27.933	0.073
G16B15SV48	Mean	1064.850	0.164	2.470	34.775	0.039	1.300	0.538	5.554	30.196	0.099
G16B15SV48	Max	1625.379	0.242	3.098	50.387	0.058	1.599	0.693	8.362	32.611	0.115

TABLE III: Overview of frame size, GoP size, bit rate, and quality statistics of single–layer encodings with MPEG–4 Part 2.

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B1Mp01	Min	3.550	14.775	0.226	2.254	3.546	14.307	0.181	1.722	49.156	0.002
G16B1Mp01	Mean	7.077	25.050	0.478	4.431	6.012	24.180	0.339	2.802	50.323	0.027
G16B1Mp01	Max	10.292	42.834	0.604	6.093	10.280	30.425	0.446	4.102	51.174	0.056
G16B1Mp02	Min	10.988	3.802	0.512	4.417	0.912	8.666	0.368	2.553	43.126	0.018
G16B1Mp02	Mean	24.844	7.998	0.938	9.130	1.920	14.787	0.615	4.974	45.354	0.046
G16B1Mp02	Max	39.997	13.839	1.315	14.624	3.321	18.666	0.917	8.745	46.925	0.078
G16B1Mp04	Min	27.270	1.712	0.773	6.820	0.411	5.684	0.479	3.112	39.222	0.032
G16B1Mp04	Mean	55.755	3.473	1.166	12.833	0.834	9.126	0.687	5.962	41.410	0.063
G16B1Mp04	Max	88.819	5.576	1.552	20.767	1.338	11.295	0.996	10.581	43.279	0.093
G16B1Mp08	Min	62.030	0.863	1.021	9.395	0.207	3.502	0.539	2.905	35.303	0.046
G16B1Mp08	Mean	113.311	1.612	1.293	15.313	0.387	5.278	0.670	6.140	37.640	0.078
G16B1Mp08	Max	176.259	2.451	1.543	23.124	0.588	6.348	0.910	10.345	39.886	0.099
G16B1Mp12	Min	93.937	0.632	1.066	10.486	0.152	2.478	0.526	2.596	33.016	0.054
G16B1Mp12	Mean	158.054	1.101	1.282	15.068	0.264	3.709	0.626	5.672	35.557	0.081
G16B1Mp12	Max	240.742	1.619	1.487	20.564	0.389	4.393	0.801	8.947	38.038	0.107
G16B1Mp16	Min	120.462	0.538	0.988	10.761	0.129	1.921	0.506	2.721	31.591	0.061
G16B1Mp16	Mean	190.314	0.885	1.222	13.965	0.212	2.843	0.590	5.181	34.301	0.088
G16B1Mp16	Max	282.815	1.262	1.478	17.344	0.303	3.358	0.726	7.584	37.018	0.114
G16B1Mp20	Min	141.011	0.498	0.907	10.555	0.119	1.636	0.490	2.820	30.477	0.066
G16B1Mp20	Mean	211.278	0.779	1.141	12.620	0.187	2.296	0.558	4.731	33.348	0.094
G16B1Mp20	Max	305.457	1.078	1.402	14.405	0.259	2.732	0.667	6.495	36.238	0.107
G16B1Mp24	Min	156.622	0.473	0.844	10.040	0.113	1.561	0.480	2.861	29.853	0.070
G16B1Mp24	Mean	226.436	0.717	1.069	11.504	0.172	1.929	0.540	4.373	32.691	0.099
G16B1Mp24	Max	321.808	0.971	1.304	13.762	0.233	2.340	0.635	5.717	35.822	0.125
G16B1Mp28	Min	168.090	0.461	0.789	9.292	0.111	1.368	0.461	2.830	29.254	0.073
G16B1Mp28	Mean	236.072	0.682	1.000	10.410	0.164	1.655	0.524	4.057	32.135	0.100
G16B1Mp28	Max	329.936	0.905	1.198	13.524	0.217	2.041	0.607	5.126	35.249	0.127
G16B3Mp01	Min	3.567	14.791	0.230	2.324	3.550	14.560	0.195	1.766	49.172	0.002
G16B3Mp01	Mean	6.935	25.626	0.464	4.319	6.150	24.220	0.369	2.902	50.414	0.027
G16B3Mp01	Max	10.281	42.631	0.614	6.028	10.231	30.268	0.512	4.664	51.320	0.057
G16B3Mp02	Min	10.679	4.157	0.499	4.430	0.998	8.666	0.372	2.561	43.152	0.019
G16B3Mp02	Mean	22.940	8.495	0.872	8.448	2.039	14.864	0.620	4.896	45.409	0.047
G16B3Mp02	Max	36.581	14.239	1.222	13.281	3.417	18.614	0.931	9.241	47.000	0.079
G16B3Mp04	Min	26.030	1.896	0.738	6.753	0.455	5.684	0.476	3.024	39.234	0.032
G16B3Mp04	Mean	50.845	3.723	1.076	11.751	0.894	9.182	0.681	5.779	41.485	0.064
G16B3Mp04	Max	80.215	5.842	1.411	18.466	1.402	11.244	0.986	10.970	43.424	0.094
G16B3Mp08	Min	58.234	0.993	0.954	9.189	0.238	3.502	0.525	2.777	35.408	0.046
G16B3Mp08	Mean	99.445	1.775	1.152	13.557	0.426	5.319	0.636	5.681	37.729	0.079
G16B3Mp08	Max	153.091	2.611	1.312	19.208	0.627	6.323	0.831	10.021	40.046	0.099
G16B3Mp12	Min	86.883	0.760	0.919	10.114	0.182	2.478	0.511	2.709	33.120	0.055
G16B3Mp12	Mean	134.418	1.248	1.107	12.990	0.300	3.744	0.571	5.102	35.629	0.081

TABLE III: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B3Mp12	Max	200.100	1.750	1.362	16.235	0.420	4.393	0.687	8.160	38.167	0.107
G16B3Mp16	Min	109.821	0.663	0.838	10.186	0.159	1.954	0.488	2.610	31.684	0.061
G16B3Mp16	Mean	158.976	1.026	1.033	11.885	0.246	2.874	0.525	4.592	34.353	0.088
G16B3Mp16	Max	229.227	1.385	1.314	13.351	0.332	3.385	0.603	6.714	37.116	0.114
G16B3Mp20	Min	126.739	0.628	0.752	9.835	0.151	1.752	0.439	2.596	30.550	0.066
G16B3Mp20	Mean	173.512	0.922	0.944	10.687	0.221	2.339	0.485	4.127	33.377	0.094
G16B3Mp20	Max	242.029	1.200	1.210	11.619	0.288	2.832	0.538	5.612	36.298	0.107
G16B3Mp24	Min	139.118	0.604	0.693	8.970	0.145	1.610	0.410	2.573	29.911	0.070
G16B3Mp24	Mean	184.266	0.860	0.873	9.571	0.206	1.954	0.464	3.771	32.701	0.100
G16B3Mp24	Max	251.851	1.093	1.101	11.113	0.262	2.415	0.509	4.833	35.862	0.125
G16B3Mp28	Min	147.791	0.592	0.638	7.501	0.142	1.368	0.386	2.489	29.293	0.073
G16B3Mp28	Mean	190.637	0.826	0.805	8.527	0.198	1.669	0.443	3.462	32.125	0.101
G16B3Mp28	Max	257.012	1.029	0.991	10.550	0.247	2.106	0.479	4.260	35.261	0.127
G16B7Mp01	Min	3.506	15.717	0.229	2.382	3.772	16.092	0.203	1.855	49.188	0.002
G16B7Mp01	Mean	6.543	26.959	0.445	4.083	6.470	23.854	0.384	2.969	50.454	0.027
G16B7Mp01	Max	9.675	43.368	0.603	5.979	10.408	29.843	0.542	4.793	51.367	0.057
G16B7Mp02	Min	10.140	4.662	0.477	4.213	1.119	9.043	0.373	2.752	43.156	0.019
G16B7Mp02	Mean	20.619	9.272	0.800	7.503	2.225	14.433	0.617	4.866	45.435	0.047
G16B7Mp02	Max	32.616	14.996	1.123	11.790	3.599	18.443	0.920	9.038	47.039	0.080
G16B7Mp04	Min	24.215	2.188	0.688	6.305	0.525	5.726	0.471	2.963	39.244	0.032
G16B7Mp04	Mean	44.717	4.136	0.963	10.288	0.993	9.060	0.665	5.629	41.539	0.064
G16B7Mp04	Max	69.510	6.280	1.249	15.941	1.507	11.229	0.941	10.471	43.518	0.095
G16B7Mp08	Min	52.748	1.223	0.856	8.375	0.293	3.589	0.503	2.656	35.498	0.047
G16B7Mp08	Mean	83.516	2.044	0.975	11.543	0.491	5.346	0.586	5.288	37.808	0.079
G16B7Mp08	Max	124.371	2.883	1.155	15.440	0.692	6.334	0.716	8.953	40.194	0.099
G16B7Mp12	Min	76.739	0.993	0.762	9.007	0.238	2.816	0.461	2.551	33.216	0.055
G16B7Mp12	Mean	108.383	1.498	0.890	10.884	0.360	3.818	0.494	4.580	35.707	0.082
G16B7Mp12	Max	153.180	1.982	1.150	12.364	0.476	4.393	0.539	6.899	38.308	0.107
G16B7Mp16	Min	94.874	0.890	0.672	8.892	0.214	2.278	0.409	2.398	31.768	0.061
G16B7Mp16	Mean	125.457	1.264	0.802	9.811	0.303	2.946	0.435	4.003	34.414	0.089
G16B7Mp16	Max	170.799	1.603	1.065	10.663	0.385	3.420	0.446	5.520	37.232	0.114
G16B7Mp20	Min	107.361	0.861	0.578	7.885	0.207	1.941	0.357	2.219	30.621	0.066
G16B7Mp20	Mean	134.078	1.167	0.705	8.538	0.280	2.381	0.384	3.484	33.420	0.095
G16B7Mp20	Max	176.689	1.416	0.942	9.398	0.340	2.850	0.415	4.478	36.380	0.107
G16B7Mp24	Min	115.978	0.847	0.522	6.453	0.203	1.648	0.332	2.126	29.959	0.069
G16B7Mp24	Mean	140.783	1.103	0.637	7.521	0.265	1.982	0.360	3.156	32.722	0.100
G16B7Mp24	Max	179.447	1.311	0.832	8.550	0.315	2.429	0.401	3.855	35.925	0.125
G16B7Mp28	Min	121.477	0.827	0.468	5.336	0.198	1.368	0.298	2.070	29.320	0.072
G16B7Mp28	Mean	144.351	1.073	0.570	6.574	0.258	1.683	0.334	2.875	32.126	0.101
G16B7Mp28	Max	183.858	1.252	0.727	7.803	0.300	2.126	0.383	3.363	35.300	0.127
G16B15Mp01	Min	3.407	17.273	0.227	2.263	4.146	21.886	0.209	1.834	49.204	0.002
G16B15Mp01	Mean	6.288	28.615	0.424	4.110	6.868	23.963	0.385	2.894	50.421	0.028
G16B15Mp01	Max	8.804	44.627	0.582	6.122	10.710	25.379	0.547	4.694	51.377	0.057
G16B15Mp02	Min	9.561	5.317	0.453	3.615	1.276	13.344	0.376	2.550	43.155	0.018
G16B15Mp02	Mean	19.322	10.129	0.736	7.746	2.431	14.734	0.597	4.533	45.494	0.048
G16B15Mp02	Max	28.599	15.905	1.023	12.066	3.817	16.173	0.890	8.254	47.069	0.080
G16B15Mp04	Min	22.346	2.629	0.637	5.313	0.631	8.533	0.473	2.896	39.280	0.032
G16B15Mp04	Mean	40.329	4.607	0.847	10.230	1.106	9.324	0.618	5.066	41.578	0.064
G16B15Mp04	Max	57.845	6.805	1.062	15.296	1.633	10.308	0.858	9.209	43.635	0.096
G16B15Mp08	Min	46.742	1.602	0.681	6.911	0.385	5.012	0.452	2.579	35.599	0.046
G16B15Mp08	Mean	70.401	2.381	0.790	10.743	0.571	5.587	0.499	4.474	37.857	0.078
G16B15Mp08	Max	94.892	3.253	0.969	15.439	0.781	6.002	0.571	7.350	40.409	0.099
G16B15Mp12	Min	65.813	1.378	0.515	7.297	0.331	3.461	0.333	2.448	33.331	0.054
G16B15Mp12	Mean	87.018	1.825	0.669	9.016	0.438	3.829	0.389	3.732	35.761	0.080
G16B15Mp12	Max	110.322	2.311	0.910	11.091	0.555	4.139	0.424	5.443	38.548	0.107
G16B15Mp16	Min	79.432	1.257	0.383	7.096	0.302	2.592	0.264	2.249	31.872	0.060
G16B15Mp16	Mean	98.066	1.589	0.562	8.069	0.381	3.014	0.318	3.196	34.344	0.087
G16B15Mp16	Max	120.986	1.914	0.801	10.350	0.459	3.260	0.371	4.244	37.063	0.113
G16B15Mp20	Min	88.440	1.203	0.315	5.778	0.289	2.045	0.222	2.066	30.709	0.064
G16B15Mp20	Mean	104.006	1.487	0.475	6.652	0.357	2.355	0.274	2.803	33.438	0.093
G16B15Mp20	Max	126.412	1.719	0.676	7.735	0.413	2.732	0.329	3.427	36.531	0.108
G16B15Mp24	Min	94.493	1.216	0.276	4.753	0.292	1.648	0.207	1.972	30.011	0.068
G16B15Mp24	Mean	107.093	1.435	0.412	5.663	0.344	1.945	0.254	2.523	32.646	0.096
G16B15Mp24	Max	125.102	1.609	0.580	6.303	0.386	2.340	0.315	2.970	36.021	0.125
G16B15Mp28	Min	98.430	1.159	0.241	3.938	0.278	1.368	0.190	1.860	29.337	0.071
G16B15Mp28	Mean	110.076	1.398	0.358	4.942	0.335	1.649	0.233	2.317	32.035	0.098

TABLE III: *continued*

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B15Mp28	Max	131.158	1.545	0.490	5.642	0.371	2.041	0.292	2.586	35.350	0.126

From these tables, it is easy to observe the much higher compression ratios, or equivalently smaller average frame sizes or bit rates, obtained with the H.264/AVC, and H.264 SVC encoders compared to the MPEG–4 Part 2 encoder, as well as the significantly higher coefficient of variation (CoV) and peak-to-mean (PtM) values. The "hump" or concave trends of the CoV and PtM statistics as a function of the quantization parameter are apparent. The CoV and PtM values of GoP sizes are significantly lower than the values of the frame sizes. We provide a detailed analysis of smoothing on frame size statistics in Section VIII.

In the following, we provide plots to illustrate the statistical properties of the following G16-B3 encodings for all three video encoders: *Silence of the Lambs* and *Star Wars 4*, respectively for relatively high quality settings ($QP = 24$ for H.264/AVC, $QP = 28$ for H.264 SVC, and $q = 4$ for MPEG–4 Part 2) and relatively low quality settings ($QP = 38$ for H.264/AVC, $QP = 42$ for H.264 SVC, and $q = 28$ for MPEG–4 Part 2). We have chosen these particular settings, because the corresponding average video qualities of the encodings are similar for all three encoders. Due to space constraints we can not provide plots for other GoP structures, but the interested reader can view them on this website: `http://trace.eas.asu.edu`.

Figs. 2 and 3 depict frame sizes as a function of frame number n. We observe that the frame sizes have similar behaviors for all encodings with peaked and smoothed traffic for approximately the same indexes, which is of course related to the video content, with peak values occurring for frames that are harder to compress. The MPEG–4 Part 2 traces overall have higher values than for the H.264/AVC and SVC encodings (approx. same average qualities). The coefficient of variation is harder to observe visually, but we can make an estimate based on the observed average frame sizes compared to the peak values. The average frame size values of the MPEG–4 Part 2 encodings appear to be higher compared to the peaks than for the H.264/AVC and SVC traces, hence the higher variability of the latter. For the same encoder, we observe that the variability is higher for the low video quality compared to the high quality. From plots of the frame size traces at different aggregation levels, not shown here because of space constraints, we have observed that the burstiness of the videos does not die out even at large aggregation levels. This indicates the presence of long range dependencies in the video traffic.

In Figs. 4 and 5 histograms of the frame sizes are given. We observe that H.264/AVC and SVC encodings have narrower histograms with long tales than the MPEG–4 Part 2 encodings. This is the case for low and high qualities. This resembles the higher 'energy compaction' property of the H.264 encoders or equivalently their better compression efficiency. The GoP size histograms of the H.264/AVC and SVC encoders exhibit similar narrowness compared to MPEG–4 Part 2. We do not include them in this text, but they are available on the website link provided above.

In Figs. 6 and 7, we depict plots of the autocorrelation coefficient of the frame sizes as a function of the lag k in frames. The frame size autocorrelation is a comb of spikes superimposed on a slowly

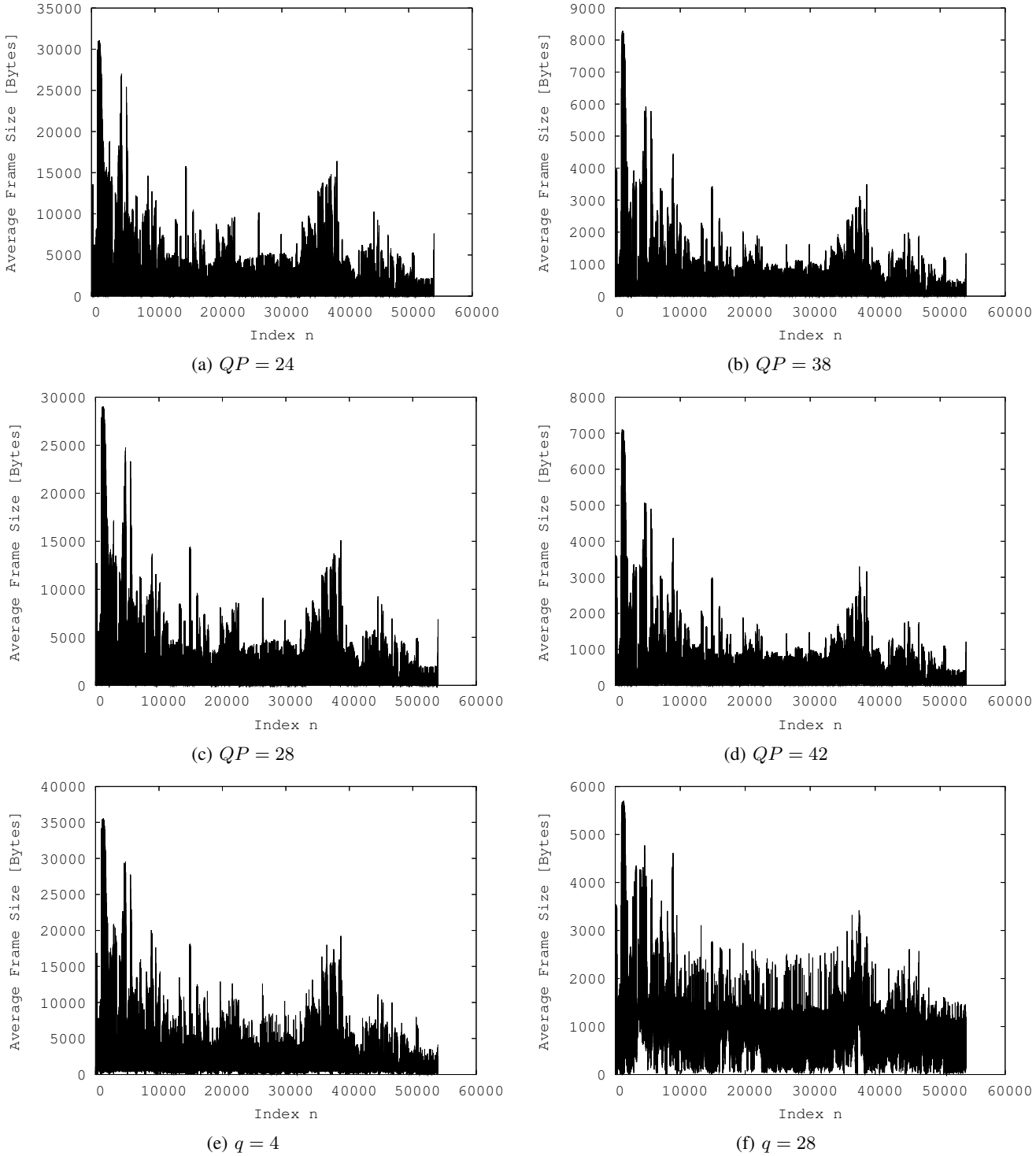
decaying curve. The larger peaks occur for lags k that are multiples of 16, i.e., the GoP size, and are the result of the correlation of the large I frames with each other and also the P frames, and to a lesser extent the B frames. The three smaller peaks in between the larger peaks are the result of the correlation of the I and the P frames with each other. For other values of k, the I or P frames are correlated with the B frames, resulting in relatively small autocorrelation. We observe that the decay of the autocorrelation curves is somewhat faster for the high qualities than for the low qualities. The decay of the MPEG–4 Part 2 encodings is much faster than for the H.264/AVC and SVC autocorrelations. The GoP size sequence autocorrelation plots are provided in 8 and 9. None of the curves have an exponential decay, indicating the presence of some long range dependencies.

Selected RD graphs for the *Sony Demo* and *Silence of the Lambs* sequences are depicted in Figs. 10(a) and 10(c). The significant rate-distortion efficiency improvement of the H.264/AVC encoder over the MPEG–4 Part 2 encoder observed in the preceding section is also apparent here for the GoP structures *G16-B1* and *G16-B3*. Appendix VI contains the RD graphs for all sequences encoded with H.264/AVC, H.264 SVC, and MPEG–4 Part 2. Each figure depicts the RD curves for all GoP structures. We observe that the H.264/AVC encoder achieves optimal RD performance for GoP structures *G16-B1* and *G16-B3* with almost coinciding RD curves. For the MPEG–4 Part 2 encoder the RD efficiency decreases significantly with increasing number of B frames in the GoP structures. Contrary to these two encoders, the H.264 SVC encoder achieves best RD performance for the *G16-B15* GoP structure and lowest for *G16-B1*. In Appendix VII, the RD comparisons are provided between all three encoders. For GoP structure *G16-B1*, H.264/AVC and H.264 SVC have comparable RD performance. However, H.264 SVC increasingly outperforms H.264/AVC for GoP structures *G16-B3* to *G16-B15*.

In addition to the RD graphs, also the VD graphs are provided in Appendix VI. Each figure depicts the VD curves for all GoP structures. From the H.264/AVC figures, we observe that the bit rate variability increases from GoP structure *G16-B1* to *G16-B3*, and that the variability then decreases for *G16-B7* and *G16-B15*, with the latter having a variability lower than *G16-B1*. For the MPEG–4 Part 2 encodings, the highest rate variability occurs for *G16-B1* and decreases with increasing number of B frames in the GoP structures. On the contrary, for the H.264 SVC encoder the highest variability occurs for the *G16-B15* GoP structure and gradually decreases with decreasing B frames. From the traffic variability figures in Appendix VII, we observe that the variability of the H.264 SVC encodings with *G16-B1* are somewhat lower than the variability of the H.264/AVC encodings. However, for the GoP structures *G16-B3* to *G16-B15* the variability of the H.264 SVC encodings are significantly higher than H.264/AVC, with values surpassing 3.0 for the *Sony Demo* sequence with structure *G16-B15*.

These observed RD and VD behaviors as function of GoP structures, are possibly explainable as follows. First, there is some influence of the choices of quantization parameters for each frame type (I, P or B). For the H.264/AVC encodings the quantization parameter of the B frames is two units larger than the parameter for the I and P frames (equal), while for the MPEG–4 Part 2 encodings all quantization parameters are chosen equal for all frame types. H.264 SVC employs a complex, but deterministic, assignment of quantization parameters to frames belonging to the temporal layers (cascading of quantization parameters), with the lowest QPs (highest quality) assigned to frames belonging to the temporal base layer and gradually higher QPs (lower quality) assigned to frames of higher temporal layers. Second, H.264 SVC uses a

hierarchical reference frame structure (dyadic) inside each GoP that is completely different from the reference frame structure employed by the other two encoders. Both reasons, cascading QP assignments and hierarchical GoP structure, are the cause of the significantly different behavior of the RD and VD curves of the H.264 SVC encoder as a function of the GoP structures. Furthermore, it is clear that the better the RD performance is of a particular GoP structure, the higher the corresponding variability is.



(a) $QP = 24$

(b) $QP = 38$

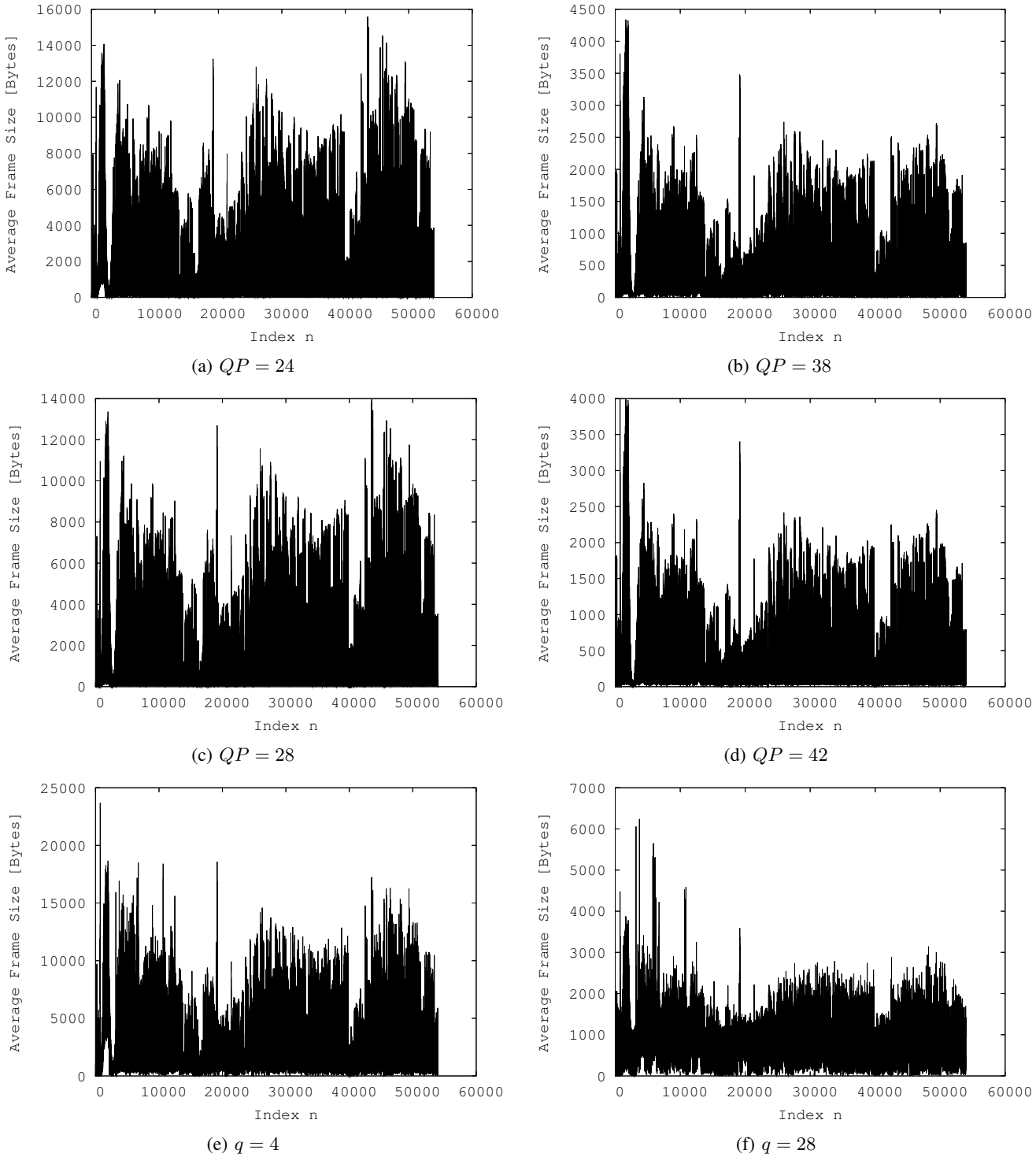
(c) $QP = 28$

(d) $QP = 42$

(e) $q = 4$

(f) $q = 28$

Fig. 2. Frame size plots of *Silence of the Lambs* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.



(a) $QP = 24$

(b) $QP = 38$

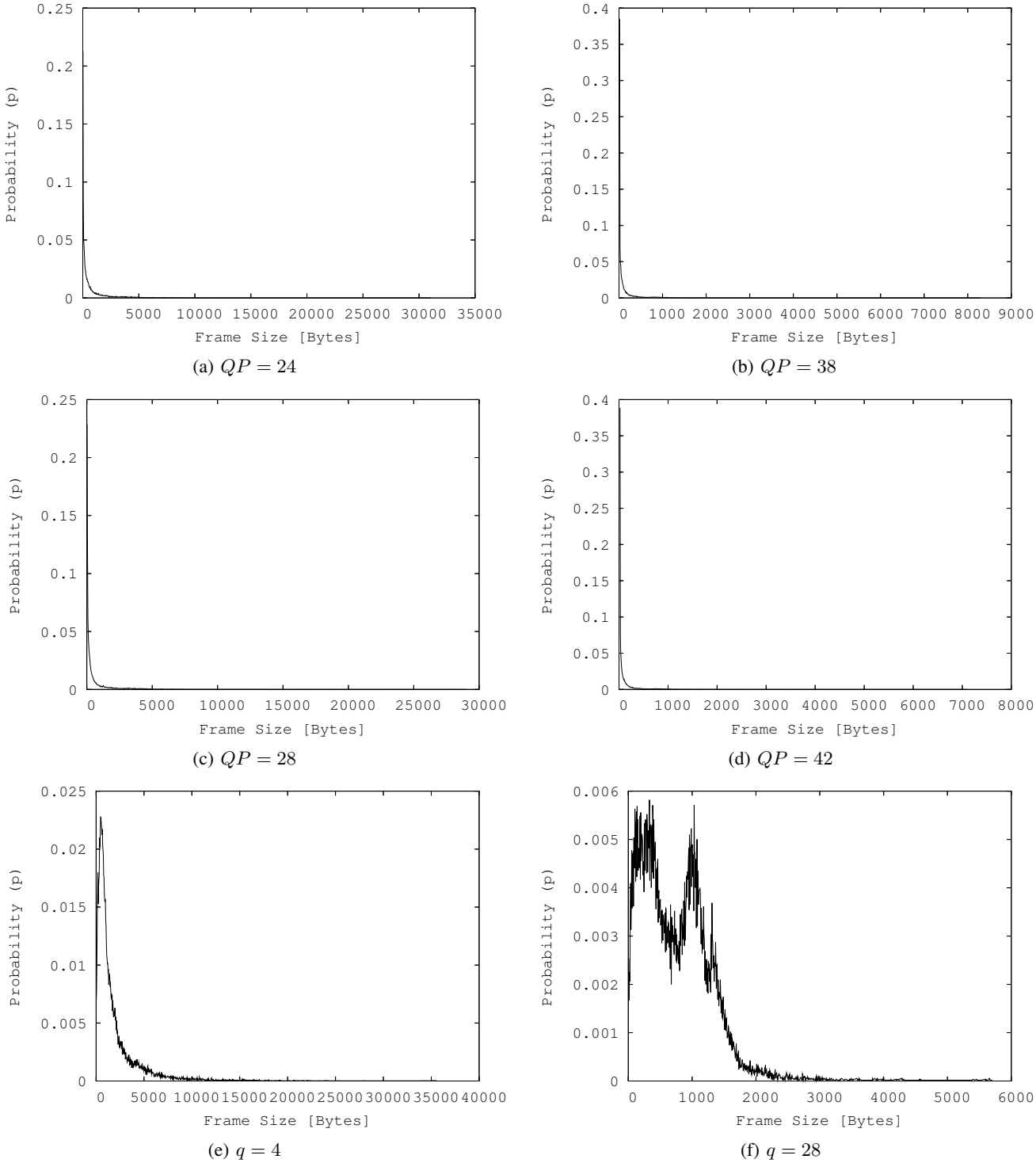
(c) $QP = 28$

(d) $QP = 42$

(e) $q = 4$

(f) $q = 28$

Fig. 3. Frame size plots of *Star Wars 4* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

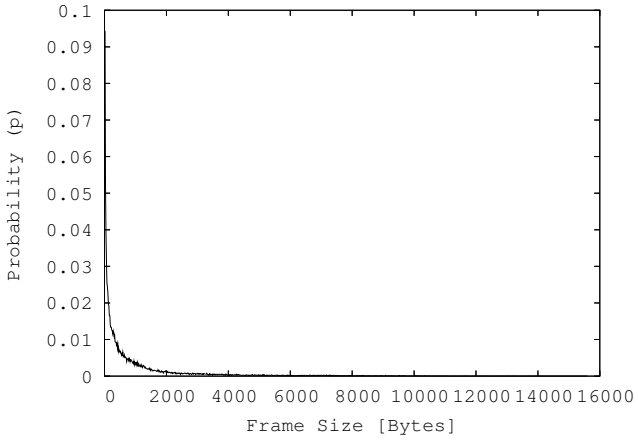


(a) $QP = 24$ (b) $QP = 38$

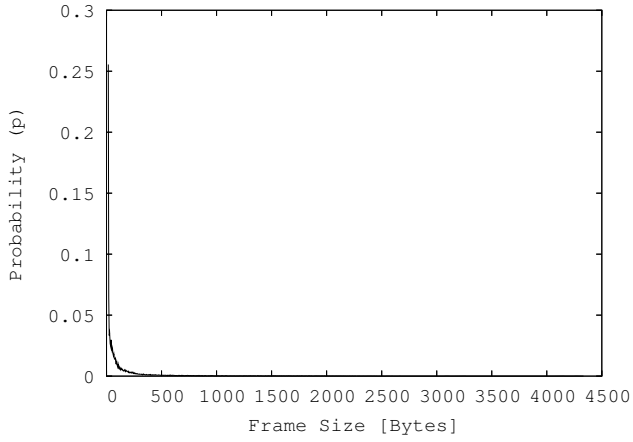
(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

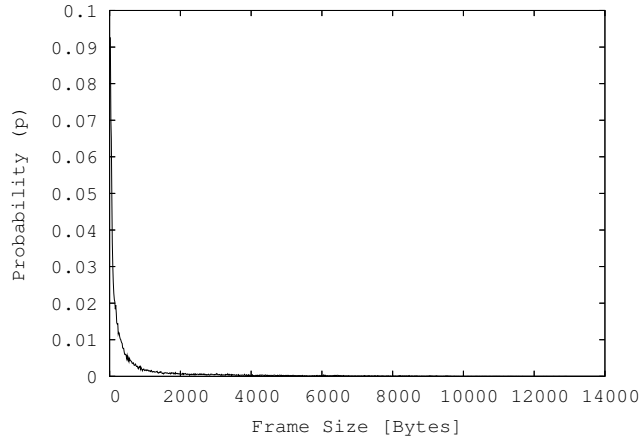
Fig. 4. Frame size histogram plots of *Silence of the Lambs* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.



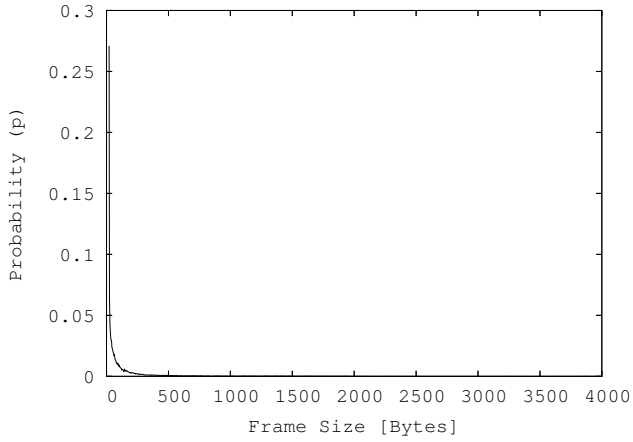
(a) $QP = 24$



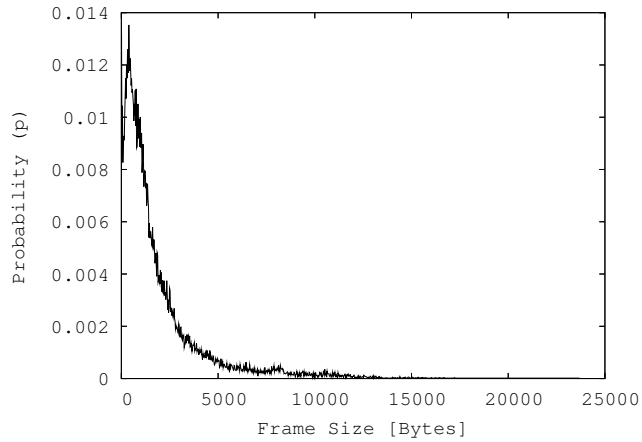
(b) $QP = 38$



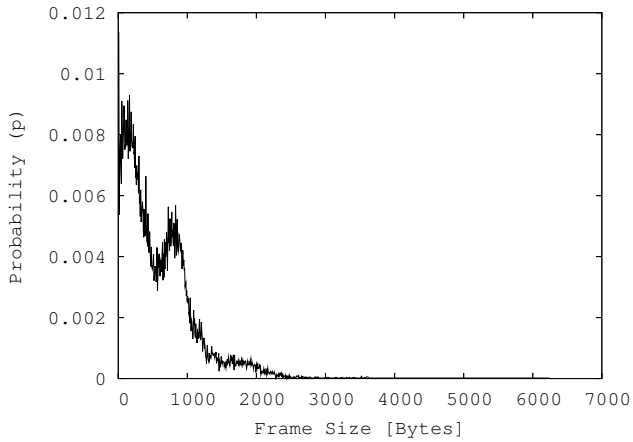
(c) $QP = 28$



(d) $QP = 42$

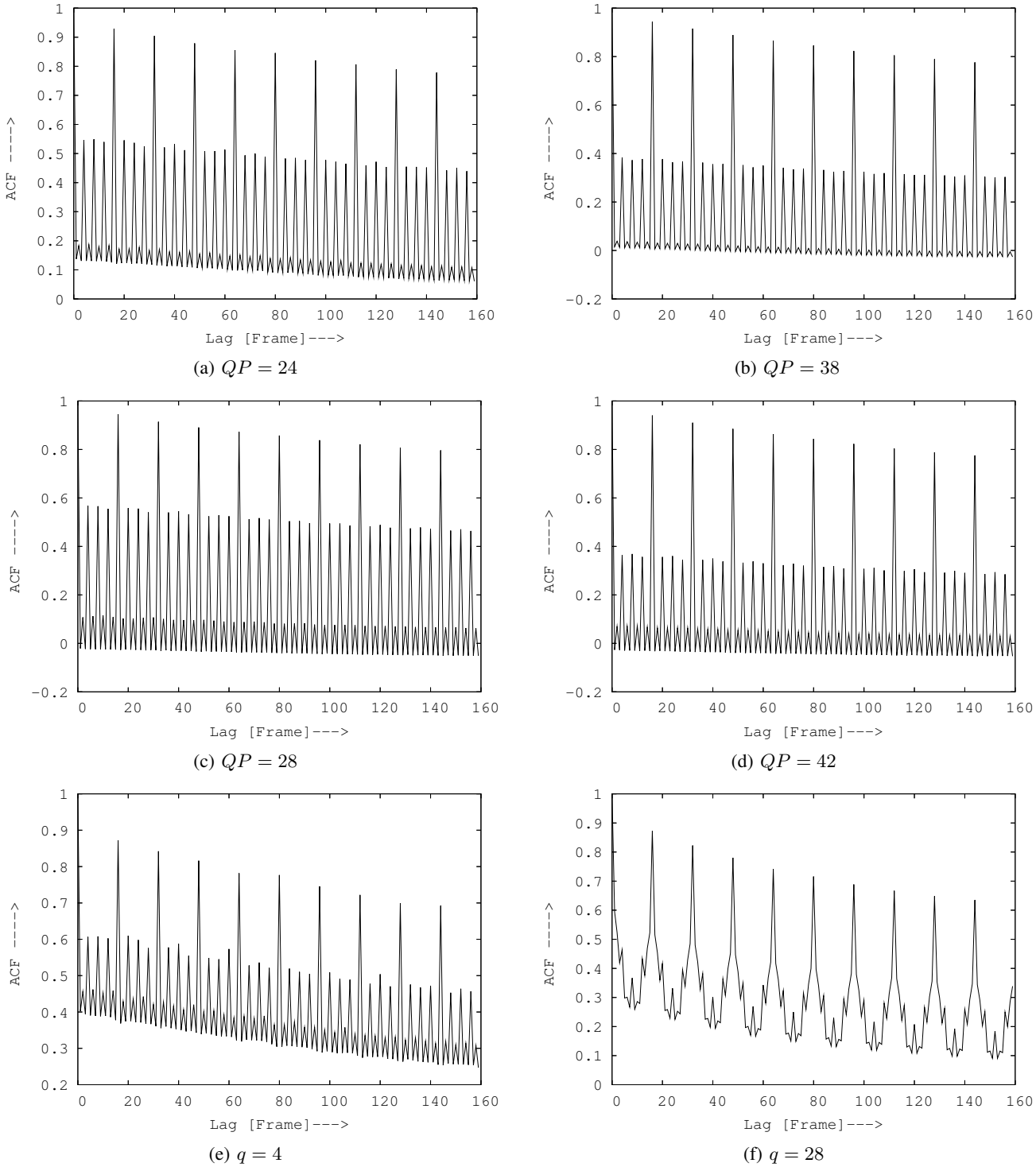


(e) $q = 4$



(f) $q = 28$

Fig. 5. Frame size histogram plots of *Star Wars 4* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

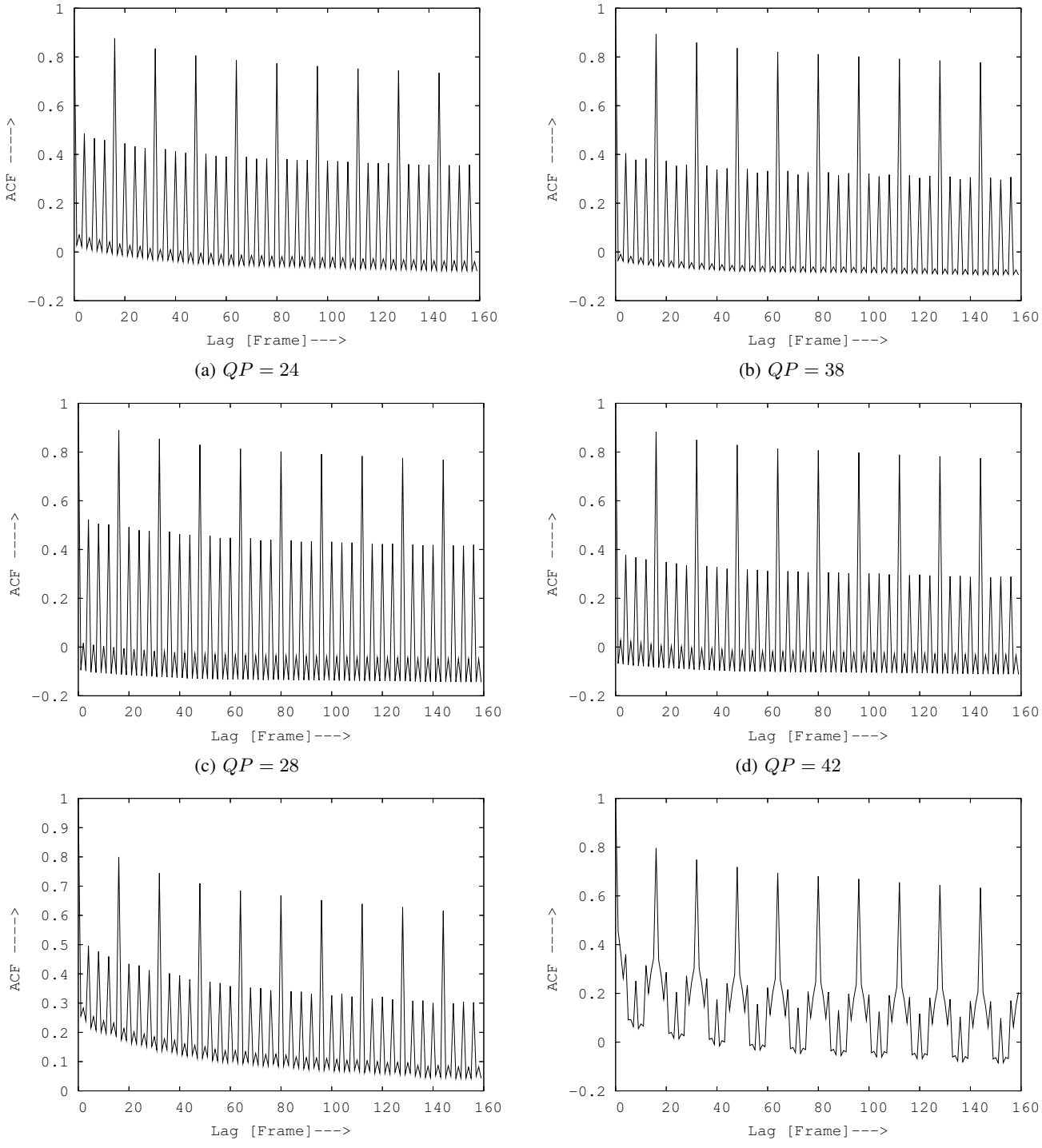


(a) $QP = 24$ (b) $QP = 38$

(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

Fig. 6. Frame size autocorrelation plots of *Silence of the Lambs* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

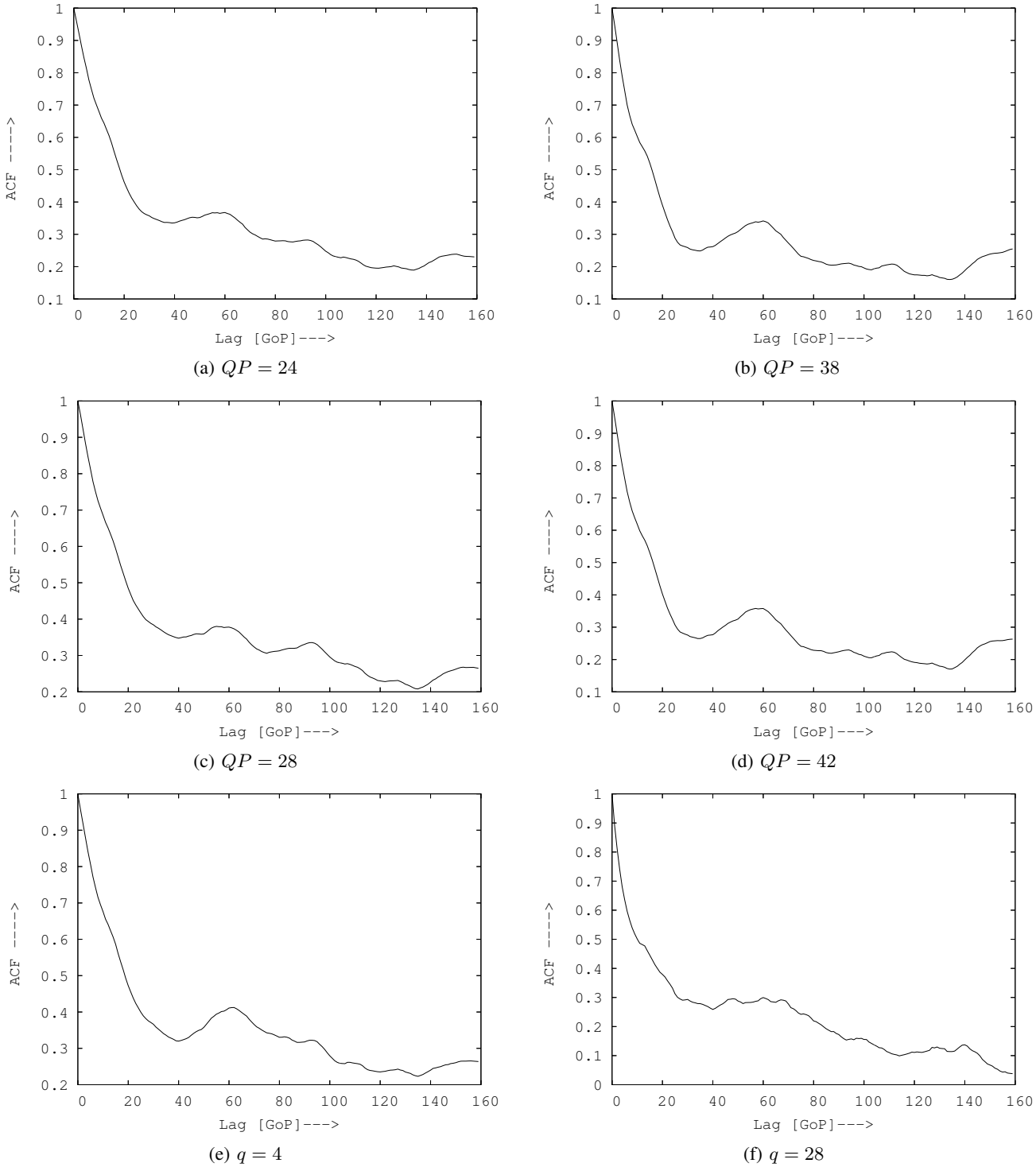


(a) $QP = 24$ (b) $QP = 38$

(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

Fig. 7. Frame size autocorrelation plots of *Star Wars 4* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

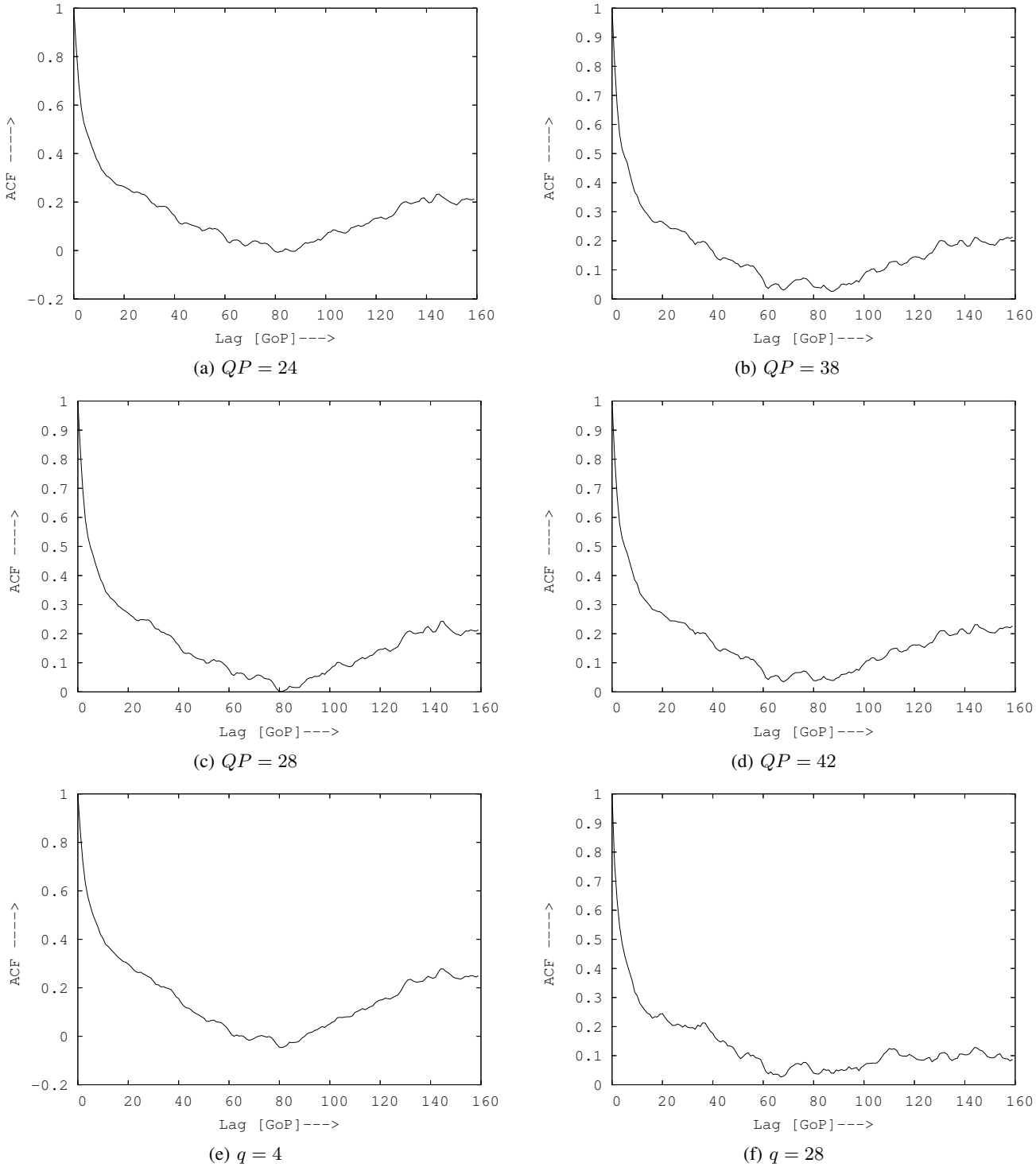


(a) $QP = 24$ (b) $QP = 38$

(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

Fig. 8. GoP size autocorrelation plots of *Silence of the Lambs* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.



(a) $QP = 24$ (b) $QP = 38$

(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

Fig. 9. Frame size autocorrelation plots of *Star Wars 4* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

TABLE IV: Overview of statistics for rate controlled single-layer encodings with H.264/AVC (FRC), and MPEG–4 Part 2 (MpRC).

Encoding Mode		Compr. ratio	Frame Size			Bit Rate		GoP Size		Frame Quality	
			Mean $\bar{X}$ [kbyte]	CoV $S_X/\bar{X}$	Peak/M. $X_{\max}/\bar{X}$	Mean $\bar{X}/T$ [Mbps]	Peak $X_{\max}/T$ [Mbps]	CoV $S_Y/\bar{Y}$	Peak/M. $Y_{\max}/\bar{Y}$	Mean $\bar{Q}$ [dB]	CoV $CoQV$
G16B3F22	Min	33.566	1.296	1.057	7.994	0.311	4.585	0.546	2.814	39.918	0.034
G16B3F22	Mean	71.524	2.718	1.523	15.216	0.652	8.415	0.731	6.338	42.650	0.072
G16B3F22	Max	117.303	4.530	2.016	27.627	1.087	10.514	1.108	12.798	44.621	0.097
G16B3Mp04	Min	26.030	1.896	0.738	6.753	0.455	5.684	0.476	3.024	39.234	0.032
G16B3Mp04	Mean	50.845	3.723	1.076	11.751	0.894	9.182	0.681	5.779	41.485	0.064
G16B3Mp04	Max	80.215	5.842	1.411	18.466	1.402	11.244	0.986	10.970	43.424	0.094
G16B3FRC1	Min	33.606	1.297	1.007	9.420	0.311	10.230	0.248	3.895	39.613	0.078
G16B3FRC1	Mean	71.847	2.693	1.524	32.330	0.646	16.439	0.494	10.964	42.729	0.146
G16B3FRC1	Max	117.273	4.525	1.906	54.497	1.086	27.922	0.732	19.334	44.635	0.249
G16B3MpRC1	Min	22.863	1.896	0.757	7.635	0.455	7.998	0.024	1.104	35.900	0.071
G16B3MpRC1	Mean	48.489	4.147	1.234	19.166	0.995	15.587	0.671	8.725	39.951	0.159
G16B3MpRC1	Max	80.196	6.651	1.863	38.580	1.596	22.089	1.617	15.383	42.970	0.315
G16B3F28	Min	83.141	0.601	1.478	12.474	0.144	2.520	0.522	3.053	36.630	0.046
G16B3F28	Mean	156.962	1.191	1.877	21.301	0.286	5.387	0.749	7.401	39.047	0.088
G16B3F28	Max	252.882	1.829	2.345	38.578	0.439	6.687	1.130	15.060	41.114	0.111
G16B3Mp08	Min	58.234	0.993	0.954	9.189	0.238	3.502	0.525	2.777	35.408	0.046
G16B3Mp08	Mean	99.445	1.775	1.152	13.557	0.426	5.319	0.636	5.681	37.729	0.079
G16B3Mp08	Max	153.091	2.611	1.312	19.208	0.627	6.323	0.831	10.021	40.046	0.099
G16B3FRC2	Min	83.069	0.602	1.442	16.527	0.144	7.261	0.393	6.166	36.403	0.103
G16B3FRC2	Mean	157.067	1.187	1.948	47.483	0.285	12.291	0.670	13.012	39.168	0.178
G16B3FRC2	Max	252.737	1.831	2.642	73.719	0.439	27.887	1.316	24.333	41.595	0.308
G16B3MpRC2	Min	58.229	0.994	0.975	10.610	0.239	5.710	0.052	1.394	32.569	0.091
G16B3MpRC2	Mean	99.705	1.766	1.407	22.890	0.424	8.461	0.684	10.667	36.701	0.169
G16B3MpRC2	Max	153.006	2.612	2.536	37.476	0.627	13.315	2.266	16.223	39.308	0.302
G16B3F38	Min	308.086	0.178	1.810	19.962	0.043	1.041	0.498	2.863	30.648	0.065
G16B3F38	Mean	544.005	0.331	2.170	28.957	0.079	2.129	0.671	7.869	32.936	0.111
G16B3F38	Max	854.575	0.494	2.667	46.594	0.118	2.710	0.953	14.833	35.216	0.148
G16B3Mp20	Min	126.739	0.628	0.752	9.835	0.151	1.752	0.439	2.596	30.550	0.066
G16B3Mp20	Mean	173.512	0.922	0.944	10.687	0.221	2.339	0.485	4.127	33.377	0.094
G16B3Mp20	Max	242.029	1.200	1.210	11.619	0.288	2.832	0.538	5.612	36.298	0.107
G16B3FRC3	Min	307.709	0.178	1.836	32.933	0.043	1.930	0.410	5.932	30.810	0.130
G16B3FRC3	Mean	543.046	0.331	2.487	86.024	0.079	6.782	0.882	17.950	33.286	0.209
G16B3FRC3	Max	854.164	0.494	3.986	170.161	0.119	17.228	2.412	50.069	36.050	0.331
G16B3MpRC3	Min	126.417	0.663	0.895	24.789	0.159	5.737	0.306	2.903	30.320	0.096
G16B3MpRC3	Mean	168.103	0.943	1.105	41.489	0.226	9.327	0.418	9.603	33.272	0.156
G16B3MpRC3	Max	229.454	1.203	1.271	54.371	0.289	13.737	0.599	17.651	36.631	0.230

VII. Impact of Rate Control on Rate Variabilities

So far we have focused on open-loop variable bit rate encoding, which allows us to examine the pure impact of video encoding technologies on traffic statistics. Nevertheless, often rate control algorithms are used to adapt the bit rate of a video stream towards a specified target bit rate. Studying rate controlled video traffic implies the selection of a particular algorithm [41], and hence dependency of the traffic analysis on this algorithm. With these limitations in mind, we provide rate control results in Table IV for comparison with the variable bit rate statistics of MPEG–4 Part 2 and H.264/AVC encodings. Detailed frame size, GoP size, and quality statistics, are provided in respectively Appendices I, II, and IV.

The *TM5* rate control technique is used for MPEG–4 Part 2 encodings and the rate control algorithm of the *JM 12.2* reference software is used for H.264/AVC encodings [41]. We set the target bit rates for each sequence equal to the mean bit rates of the corresponding variable bit rate encodings with GoP structure *G16-B3*. Table IV summarizes the traffic statistics, whereby *FRC* means H.264/AVC with rate control and *MpRC* means MPEG–4 Part 2 with rate control. The H.264/AVC rate control achieved all target rates quite accurately for all sequences, while *TM5* mostly achieved its target rates within a small margin.

We first observe from Table IV that the mean CoV and PtM of the frame sizes as well as the $CoQV$ values with rate control are typically larger than the corresponding metrics without rate control. On the other hand, the mean CoV of the GoP sizes with rate control is typically smaller than without rate control. Furthermore, the maximum CoV and PtM values for frame and GoP sizes, are typically significantly larger for the rate controlled traffic, while the minimum CoV and PtM values are smaller for GoP sizes with rate control. These observations can be explained by the long video sequences with many scene changes that make prediction of rates by the control algorithm more challenging, resulting in larger maximum CoV and PtM. Moreover, the larger time horizons, such as GoP lengths, that the rate control algorithms work on to achieve the target bit rate, and the different treatment of I, P, and B frames to maintain compression efficiency, result in widely varying individual frame sizes and qualities.

From this brief rate control experiment, we conclude that rate control has very limited effectiveness in mitigating the observed increases of the bit rate variabilities between MPEG–4 Part 2 and H.264/AVC. We leave a detailed analysis of rate control for future work.

VIII. Frame Size Smoothing

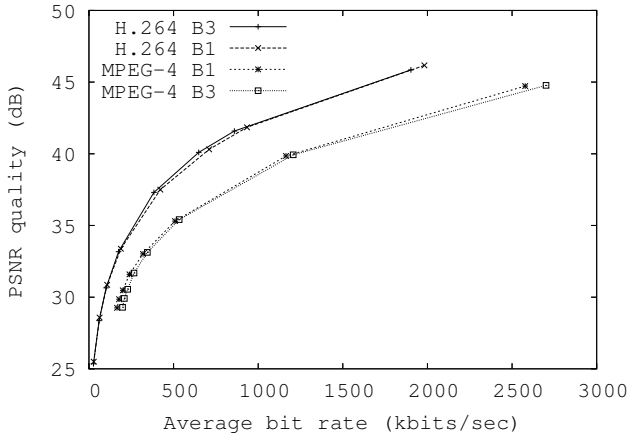
In order to mitigate the effect of variable video frame sizes on network transport, a wide variety of frame size smoothing mechanisms have been developed and studied in the context of the MPEG-4, H.263, and preceding codecs [42]. In this section we examine the fundamental impact of frame size smoothing on H.264/AVC traffic by considering the elementary smoothing of the frames over non-overlapping blocks of a frames each. More specifically, with the aggregation level a, the sizes of a consecutive frames are averaged, and transmitted at the corresponding average bit rate across a network. Given the original (unsmoothed) frame size sequence $X_m,\ m = 1, \ldots, M$, we obtain the smoothed frame sizes

$$Y_n = \frac{1}{a} \sum_{m=(n-1)a+1}^{na} X_m \tag{6}$$

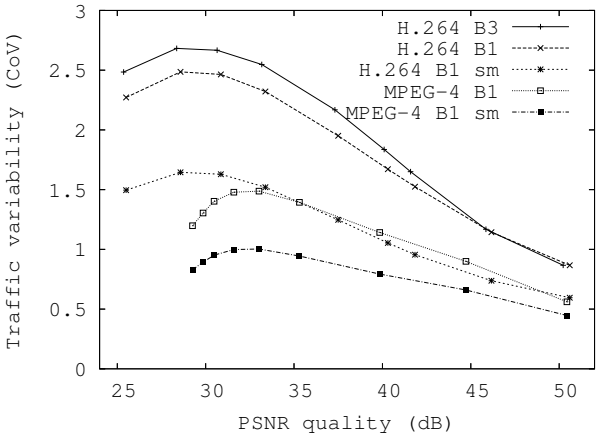
for $n = 1, \ldots, M/a$ and examine their CoV.

To illustrate the effect of frame size smoothing on the bit rate variability, we have plotted the VD curves of both the unsmoothed and the smoothed (denoted by `sm` in the figures) H.264/AVC and MPEG–4 Part 2 video traffic in selected Figs. 10(b) and 10(d). The *G16-B1* traffic is smoothed over $a = 2$ frames and the *G16-B3* type traffic is smoothed over $a = 4$ frames. We observe that the bit rate variability of the smoothed H.264/AVC video traffic is significantly higher or comparable to the rate variability of the unsmoothed MPEG–4 Part 2 over a wide PSNR range, such as in Fig. 10(b) over the full PSNR range and in Fig. 10(d) from small PSNR values until about 41dB. Throughout, the smoothed H.264/AVC video traffic is much more variable than the smoothed MPEG–4 Part 2 video traffic.

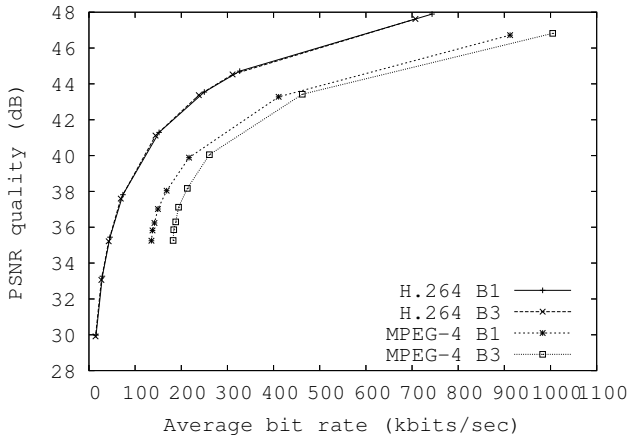
VD curve comparisons between H.264/AVC, H.264 SVC, and MPEG–4 Part 2 for all CIF video sequences, are available in Appendix VII. The VD graphs depict variabilities of the video traffic smoothed over $a = 2$, $a = 4$, and $a = 8$ frames for all GoP structures, i.e., for each GoP *G16-B1*, *G16-B3*, *G16-B7*, and *G16-B15*, there is a separate graph provided. We observe that the variability of the H.264/AVC traffic smoothed over two frames is significantly higher than the unsmoothed MPEG–4 Part 2 traffic for all sequences and all GoP structures, except for *G16-B1*. For the latter, the variability of the smoothed



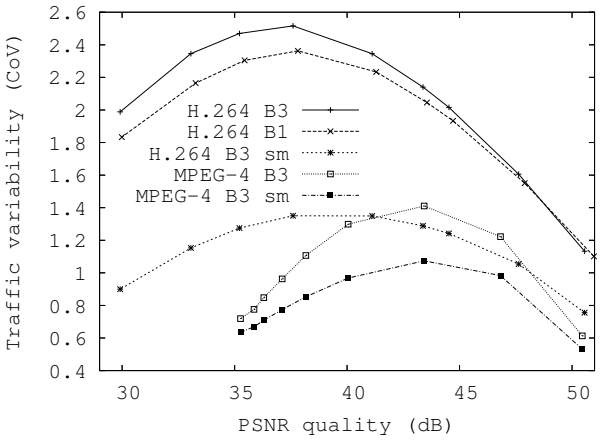
(a) RD graph for CIF *Sony Demo* sequence



(b) VD graph for CIF *Sony Demo* sequence



(c) RD graph for CIF *Silence of the Lambs*



(d) VD graph for CIF *Silence of the Lambs*

Fig. 10. Rate-distortion (RD) and rate variability-distortion (VD) graphs for CIF *Sony Demo* sequence and *Silence of the Lambs* with GoP structures G16-B1 and G16-B3 without and with frame size smoothing (`sm`).

traffic is partially higher and partially lower than the unsmoothed MPEG–4 Part 2 traffic. However, it is always higher than the variability of the MPEG–4 traffic smoothed over two frames. The more smoothing is applied to the H.264/AVC traffic the lower the variability becomes, however, for the same smoothing the MPEG–4 traffic variability also drops and stays well below the smoothed H.264/AVC traffic. In some cases, such as for the *Silence of the Lambs* sequence, the variability of the H.264/AVC traffic smoothed over eight frames is still higher than the unsmoothed MPEG–4 Part 2 traffic or comparable. This occurs for GoP structures *G16-B7* and *G16-B15*. The H.264 SVC smoothed traffic follows similar trends.

These encoding results illustrate the significantly higher bit rate variability of H.264/AVC, and H.264 SVC video traffic compared to MPEG–4 Part 2 video traffic, even when frame size smoothing is applied. This increased rate variability must be taken into account and its impact evaluated when using existing network protocols and mechanisms for streaming H.264/AVC, and H.264 SVC encoded video.

IX. Long-Range Dependence

It is well-known that self-similarity or long-range dependence in video traffic can have a significant impact on the performance of packet-switched networks [43]. The losses and delays of queuing systems are considerably larger for video traffic with a high degree of long range dependence than for traffic with low long range dependence. Intuitively, long range dependent traffic is bursty (highly variable) over a wide range of timescales.

The Hurst parameter is a metric for the degree of long range dependence [44]. In general, time series without long range dependence have a Hurst parameter of 0.5. Hurst parameters between 0.5 and 1.0 indicate long range dependence, with large Hurst parameters indicating a higher degree of long range dependence. We estimate the Hurst parameters of the frame size video traffic from *pox* diagrams of the R/S statistic [44]. For each frame size trace, we generate pox diagrams of R/S for different aggregation levels a, i.e., we averaged the frame size traces over non-overlapping blocks of a frames and then plotted the pox diagram of R/S. Hurst parameters larger than 0.5 for all aggregation levels are a strong indication of long range dependence. For each frame size trace, we generate pox diagrams of R/S for different aggregation levels a, i.e., we averaged the frame size traces over non-overlapping blocks of a frames and then plotted the pox diagram of R/S. Hurst parameters larger than 0.5 for all aggregation levels are a strong indication of long range dependence. Table V presents the Hurst parameters estimated from the H.264/AVC, H.264 SVC, and MPEG–4 Part 2 encodings of the *Silence of the Lambs* sequence (*G16-B3* GoP). The table covers aggregation levels ranging from a = 1 to $a = 800$ frames. Table VI contains the Hurst parameters for the *Star Wars 4* sequence (*G16-B3* GoP). Figs. 11 and 12 depict the pox diagrams for the aggregation level $a = 48$ for both sequences with high quality settings ($QP = 24$ for H.264/AVC, $QP = 28$ for H.264 SVC, and $q = 4$ for MPEG–4 Part 2) and low quality settings ($QP = 38$ for H.264/AVC, $QP = 42$ for H.264 SVC, and $q = 28$ for MPEG–4 Part 2).

We observe from both tables that the encodings with H.264/AVC, H.264 SVC and MPEG–4 Part 2 have similar large values (> 0.75) for all aggregation levels. This indicates a high degree of long range dependence. It is interesting to note that the Hurst parameter estimates are similar for all three encoders despite the improved bit rate-distortion performance and higher bit rate variability of the H.264/AVC and SVC encoders compared to MPEG–4 Part 2. This similarity of the long-range dependence properties may be due to the fact that the new coding mechanisms responsible for the increased compression gains in H.264/AVC operate primarily on a time scale on the order of tens of frames, i.e., seconds of video run time. Thus, the traffic characteristics over very long time scales, say hundreds or thousands of video frames, or equivalently, minutes or tens of minutes of video run time, which govern to a large extend the long range dependence properties, may not be significantly affected. Furthermore, we observe that for different quality levels that there is no trend in the H value estimates and that the H values are roughly the same.

Appendix III contains the complete long-range dependence analysis of all encodings. Hurst parameters are estimated using pox diagrams of the R/S statistics, periodograms and variance time plots. Long-range dependence properties appear consistently strong for all quality levels (determined by quantization parameter) of the videos. The actual plots can be viewed at `http://trace.eas.asu.edu`.

TABLE V

HURST PARAMETERS FOR *Silence of the Lambs* SEQUENCE ENCODED WITH H.264/AVC, H.264 SVC, AND MPEG–4 PART 2 AS A FUNCTION OF AGGREGATION LEVEL IN FRAMES AND QUANTIZATION PARAMETER OF ENCODING.

(a) H.264/AVC

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
QP=10	0.953	0.912	0.899	0.909	0.889	0.896	0.885	0.950	0.941	0.908	0.893	0.915
QP=16	0.927	0.893	0.882	0.889	0.874	0.871	0.878	0.925	0.901	0.887	0.852	0.896
QP=22	0.897	0.882	0.870	0.880	0.861	0.854	0.866	0.909	0.864	0.858	0.819	0.878
QP=24	0.890	0.881	0.868	0.876	0.858	0.848	0.860	0.898	0.856	0.852	0.813	0.872
QP=28	0.872	0.879	0.864	0.871	0.859	0.842	0.854	0.892	0.850	0.854	0.812	0.869
QP=34	0.852	0.883	0.866	0.867	0.865	0.841	0.849	0.890	0.859	0.867	0.840	0.878
QP=38	0.840	0.880	0.868	0.863	0.863	0.840	0.851	0.894	0.874	0.871	0.866	0.883
QP=42	0.827	0.875	0.862	0.858	0.862	0.846	0.858	0.905	0.886	0.883	0.882	0.892
QP=48	0.793	0.855	0.847	0.852	0.859	0.849	0.858	0.920	0.872	0.899	0.887	0.910

(b) H.264 SVC

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
QP=10	0.912	0.919	0.911	0.914	0.900	0.914	0.881	0.949	0.941	0.929	0.916	0.926
QP=16	0.920	0.905	0.892	0.904	0.896	0.900	0.895	0.945	0.931	0.947	0.917	0.937
QP=22	0.893	0.897	0.882	0.893	0.878	0.874	0.895	0.935	0.905	0.932	0.883	0.921
QP=24	0.886	0.894	0.881	0.889	0.874	0.869	0.891	0.932	0.896	0.917	0.869	0.914
QP=28	0.871	0.892	0.876	0.883	0.868	0.860	0.889	0.930	0.884	0.898	0.849	0.903
QP=34	0.853	0.891	0.871	0.874	0.864	0.850	0.874	0.909	0.873	0.890	0.843	0.894
QP=38	0.845	0.886	0.872	0.868	0.865	0.849	0.864	0.902	0.873	0.891	0.859	0.889
QP=42	0.837	0.882	0.871	0.861	0.862	0.847	0.860	0.901	0.882	0.886	0.878	0.888
QP=48	0.819	0.866	0.854	0.854	0.857	0.861	0.862	0.916	0.882	0.899	0.885	0.880

(c) MPEG–4 Part 2

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
Q=1	0.979	0.923	0.920	0.929	0.918	0.909	0.892	0.944	0.949	0.963	0.946	0.953
Q=2	0.960	0.905	0.903	0.918	0.899	0.902	0.900	0.936	0.934	0.953	0.911	0.927
Q=4	0.936	0.897	0.889	0.893	0.874	0.885	0.888	0.921	0.919	0.900	0.880	0.896
Q=8	0.910	0.883	0.867	0.873	0.856	0.869	0.851	0.910	0.869	0.854	0.842	0.844
Q=12	0.898	0.872	0.856	0.874	0.860	0.860	0.829	0.886	0.842	0.842	0.841	0.829
Q=16	0.893	0.864	0.848	0.868	0.850	0.850	0.821	0.866	0.819	0.835	0.848	0.818
Q=20	0.888	0.859	0.845	0.862	0.844	0.839	0.815	0.849	0.802	0.829	0.853	0.815
Q=24	0.887	0.850	0.833	0.857	0.837	0.829	0.801	0.836	0.781	0.816	0.852	0.804
Q=28	0.885	0.847	0.829	0.849	0.826	0.822	0.796	0.822	0.763	0.807	0.852	0.796

X. QUALITY AND CORRELATION STATISTICS

In this section, we analyze the video quality of our encodings. Appendix IV contains the detailed quality analysis of all encodings. We use the PSNR as our quality metric, which is overall a good measure of video frame quality and is easy to compute for large numbers of long video encodings. For a detailed specification of all statistics used in this section, we refer to [9]. We focus on the luminance component in our analysis.

We observe that the mean PSNR, $\bar{Q}$, (also alternative PSNR, $\bar{Q}'$) decreases as the quantization parameter used in the encodings increases, both for H.264/AVC and MPEG–4 Part 2. This is what we expect to see when the bit rate decreases. Conversely, the coefficient of quality variation, $CoQV$, (also alternative, $CoQV'$) increases when the video quality decreases. This means that the relative quality fluctuations will be larger and more visible especially when the video quality is low. The same observations are valid on the GoP level. Furthermore, the values of the coefficient of quality variation on the GoP level are close to

TABLE VI

HURST PARAMETERS FOR *Star Wars 4* SEQUENCE ENCODED WITH H.264/AVC, H.264 SVC, AND MPEG–4 PART 2 AS A FUNCTION OF AGGREGATION LEVEL IN FRAMES AND QUANTIZATION PARAMETER OF ENCODING.

(a) H.264/AVC

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
QP=10	0.913	0.853	0.859	0.872	0.848	0.865	0.827	0.855	0.840	0.875	0.896	0.830
QP=16	0.887	0.855	0.862	0.876	0.855	0.877	0.859	0.890	0.884	0.940	0.989	0.911
QP=22	0.864	0.851	0.858	0.875	0.859	0.883	0.873	0.899	0.904	0.959	1.014	0.944
QP=24	0.858	0.851	0.859	0.877	0.862	0.887	0.878	0.902	0.906	0.958	1.019	0.945
QP=28	0.845	0.854	0.860	0.879	0.870	0.897	0.890	0.907	0.910	0.958	1.024	0.956
QP=34	0.831	0.860	0.861	0.885	0.877	0.897	0.901	0.920	0.924	0.975	1.051	0.989
QP=38	0.825	0.852	0.861	0.886	0.876	0.890	0.899	0.926	0.927	0.982	1.070	1.020
QP=42	0.810	0.848	0.858	0.884	0.872	0.886	0.900	0.931	0.946	1.001	1.087	1.047
QP=48	0.785	0.854	0.859	0.885	0.878	0.894	0.904	0.949	0.970	0.990	1.090	1.060

(b) H.264 SVC

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
QP=10	0.878	0.854	0.853	0.856	0.833	0.840	0.802	0.812	0.805	0.840	0.836	0.756
QP=16	0.865	0.861	0.861	0.871	0.855	0.863	0.849	0.871	0.873	0.910	0.937	0.850
QP=22	0.845	0.863	0.862	0.873	0.861	0.874	0.873	0.890	0.904	0.946	0.981	0.899
QP=24	0.841	0.863	0.862	0.875	0.864	0.879	0.881	0.897	0.910	0.953	0.993	0.909
QP=28	0.833	0.865	0.865	0.880	0.871	0.890	0.893	0.913	0.919	0.970	1.015	0.928
QP=34	0.826	0.869	0.870	0.889	0.882	0.905	0.906	0.926	0.931	0.983	1.049	0.963
QP=38	0.822	0.867	0.868	0.892	0.885	0.908	0.905	0.930	0.938	0.977	1.056	0.984
QP=42	0.817	0.863	0.866	0.892	0.881	0.898	0.898	0.925	0.941	0.969	1.054	1.003
QP=48	0.807	0.850	0.847	0.871	0.861	0.869	0.873	0.906	0.925	0.946	1.037	0.989

(c) MPEG–4 Part 2

Agg. Level	1	16	32	48	96	192	304	400	496	608	704	800
Q=1	0.951	0.853	0.841	0.856	0.841	0.842	0.808	0.818	0.826	0.862	0.882	0.799
Q=2	0.915	0.853	0.843	0.872	0.847	0.871	0.872	0.895	0.890	0.955	0.988	0.904
Q=4	0.886	0.850	0.848	0.873	0.854	0.873	0.870	0.905	0.894	0.957	1.016	0.928
Q=8	0.857	0.840	0.839	0.855	0.835	0.857	0.839	0.858	0.853	0.925	0.965	0.929
Q=12	0.836	0.828	0.826	0.840	0.817	0.834	0.807	0.807	0.811	0.878	0.894	0.867
Q=16	0.825	0.817	0.813	0.821	0.803	0.813	0.786	0.772	0.777	0.845	0.844	0.806
Q=20	0.820	0.808	0.799	0.806	0.789	0.795	0.769	0.756	0.763	0.828	0.822	0.795
Q=24	0.822	0.815	0.801	0.801	0.790	0.793	0.764	0.742	0.744	0.803	0.786	0.759
Q=28	0.826	0.817	0.806	0.806	0.791	0.794	0.769	0.748	0.746	0.801	0.781	0.759

the values on the frame level. However, when we look at the quality ranges, $Q_{\min}^{\max}$, there is a difference between the frame level and GoP level values, with the latter values being consistently lower. These trends are independent of the GoP structures. Note that the bit rate-distortion relationship is affected by the GoP structure, as we discussed earlier.

The tables in Appendix V give the size–MSE quality correlation coefficients ρ_{XM} and the size–PSNR quality correlation coefficients ρ_{XQ}, as well as the corresponding correlation coefficients $\rho_{XM}^{(G)}$ and $\rho_{XQ}^{(G)}$ for the GoP aggregation level. There exists an inverse relationship between PSNR quality and MSE, i.e., the smaller the PSNR, the larger the MSE and vice versa. This implies that a positive ρ_{XQ} typically corresponds to a negative ρ_{XM} and vice versa.

In this discussion we focus on ρ_{XQ}. We observe the general trend that the magnitude of ρ_{XQ} on the frame level decreases as the quality decreases. The magnitude tends to decrease in some cases towards the high qualities, especially for the H.264/AVC encodings.

On the GoP level, the magnitude of $\rho_{XQ}^{(G)}$ tends to be higher than on the frame level and tends to

increase with decreasing quality for the H.264/AVC encodings contrary to the frame level magnitudes. Conversely, for the MPEG–4 Part 2 encodings, the GoP level magnitudes tend to decrease with decreasing video quality as do the frame level magnitudes. This is an interesting distinction between both encoders with no trivial explanation.

XI. High Definition Video Traffic

A. Encoding Setup

For high definition video encoding we employ the H.264/AVC encoder with "Fidelity Range Extensions" (FREXt) [2] to optimally compress the high definition video footage. The profile is set to "High", the number of reference frames is set to two for both the past and the future, fast rate-distortion optimization is enabled, P and B weighted prediction is disabled, referenced B pictures is disabled, and the "CABAC" arithmetic coder is chosen. Our encoding tests indicate that more reference frames do not significantly improve compression performance for the *Sony Demo* sequence, but increase encoding time significantly. The group-of-pictures (GoP) consists of 12 frames and its structure is *G12-B2*, i.e., *IBBPBBPBBPBB*.

Since most of the legacy HD video is currently encoded in MPEG–2, we employ the MPEG–2 encoder's *FFmpeg* (`http://ffmpeg.sourceforge.net`) implementation (*mpeg2video*) to encode the HD sequences for comparison with H.264/AVC FREXt. The GoP structure is *G12-B2*.

B. Results and Discussion

The rate-distortion and the rate variability-distortion graphs for the *Sony Demo* and *Terminator 2* sequences are depicted in Fig. 13. The encoding results for these HD sequences with the H.264/AVC FREXt and MPEG–2 encoders show interesting distinctions between the two encoders. The bit rates obtained with the H.264/AVC FREXt encoder are clearly much smaller than those obtained with the MPEG–2 encoder. Also the rate variability is significantly different for both encoders. The rate variability is up to two times higher for the H.264/AVC FREXt encoder than for MPEG–2. This is consistent with our earlier observations from the CIF encoding experiments.

C. Investigation of Obtaining HD Video Traces Through Scaling

High definition frame size video traces of these two sequences are available in our video trace library at `http://trace.eas.asu.edu`. The encoding times on a PC are, however, extremely long, e.g., roughly 90 days are required to encode a one-hour sequence on a contemporary PC workstation, limiting the generation of HD video traces which would be needed for network simulations [45]. Therefore, we investigate if there exists a simple relationship between the frame sizes (in bit) of the encoded HD video and the frames sizes of the corresponding video when downsampled to CIF resolution and then encoded.

Since similarly high bit rate variabilities are obtained for the HD resolution as for the CIF resolution, one may be tempted to upscale CIF video frame sizes (in bits), encoded with H.264/AVC using the Main profile, to HD video frame sizes by multiplying with the factor obtained by dividing the HD resolution by the CIF resolution. This way, HD frame size video traces could be obtained with less computational effort since only the CIF resolution video would need to be encoded which requires significantly less computation time than HD video encoding. From a purely mathematical perspective, this scaling would

leave the coefficient of variation unchanged since both the standard deviation and the mean are scaled by the same value. Although this may seem as a simple solution enabling the reuse of CIF video traces, the reality of frame size scaling is much more complex.

We depict in Fig. 14 the histograms of the real scaling factors for the case where the *Sony Demo* and *Terminator 2* CIF sequence frame sizes, encoded with H.264/AVC in the Main profile with GoP structure *G12-B2* and quantization parameter QP=24, are compared to the corresponding HD sequence frame sizes, encoded in the High profile employing the same GoP structure and quantization parameter $QP = 28$. We chose these quantization parameters because they have rate variabilities that are very close.

We conclude from the histograms of scaling factors in Fig. 14 that the actual scaling factors are spread over a wide range and far from the theoretical value of 9.09 suggested by the ratio of the HD resolution to the CIF resolution. For the *Sony Demo* sequence, the actual average scaling factor is 5.4 and the maximum actual scaling factor is as large as 493. For *Terminator 2*, the actual average scaling factor is 2.9 and the maximum is 188. This deviation from the theoretical scaling factor is caused by differences in coding tools enabled by both H.264/AVC profiles as well as video content detail differences between both resolutions. This observation illustrates the necessity of encoding actual HD sequences or the necessity of building a complex frame size scaling model to obtain traces of HD video for network performance studies.

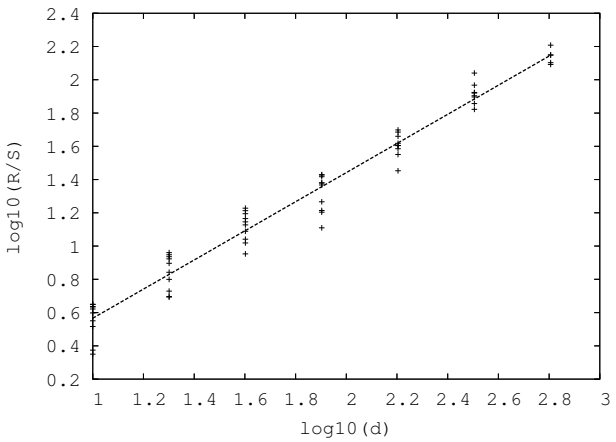
XII. Conclusion

We have examined in detail the network traffic characteristics of variable bit rate H.264/AVC and H.264 SVC single layer encoded video. We have focused on a set of long test video sequences with a wide range of typical texture and motion features. In summary, we found the following distinct characteristics of the H.264/AVC and H.264 SVC single layer video traffic:

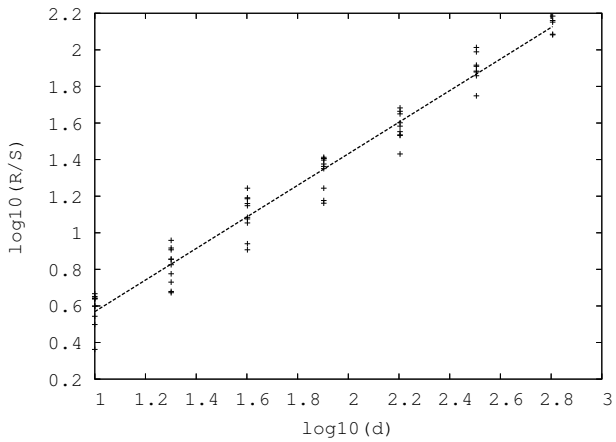
- For a fixed desired video quality, the H.264/AVC, and H.264 SVC codecs cut the average bit rate typically up to a half of the average bit rate achieved by the older MPEG–2 and MPEG–4 Part 2 codecs. This underscores the significant improvements in coding technology over the older MPEG codecs and will likely make the H.264/AVC and its extensions very popular for video streaming over bandwidth constrained networks.
- The variability of the H.264/AVC, and H.264 SVC video traffic is significantly higher than the variability of MPEG–2 and MPEG–4 Part 2 video traffic. Whereas the coefficient of variation (standard deviation normalized by mean) of the frame sizes reaches levels above 2.4 for H.264/AVC, and even above 3.0 for SVC, it does generally not exceed 1.5 with MPEG–4 Part 2. The levels of the coefficient of variation of the frame size above 1.5 are unprecedented; with MPEG–4 Part 2 the coefficients of variation were typically in the range from 0.9 to 1.4 [14], [46].
- Depending on the application scenario, it may be possible to smooth the video traffic before sending it into the network, thus reducing the traffic variability at the expense of introducing smoothing delay. We observed that the smoothed H.264/AVC and H.264 SVC video traffic exhibits variabilities at the same level or above the unsmoothed MPEG–4 Part 2 video traffic, indicating that even when smoothing is employed, the transport mechanisms for the new H.264/AVC (and extensions) video will need to be designed to accommodate substantial traffic variabilities.

- The long-range dependence characteristics of the H.264/AVC and extensions video traffic are similar to the long-range dependence characteristics of MPEG–4 Part 2 encoded video.

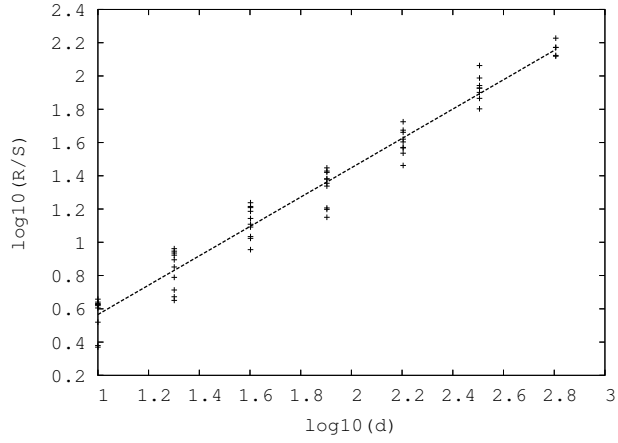
There are several directions for important future work for the networking research community. One direction is to examine the suitability of existing traffic models and video transport mechanisms for H.264/AVC video traffic. The existing traffic models, such as [17], [22], and video transport mechanisms for a wide range of communication networks, including general IP networks, see e.g., [47], [48], wireless networks, see e.g., [49], [50], and peer-to-peer network [51], were primarily developed based on MPEG–4 Part 2 video traffic. It is therefore necessary to examine how well these existing traffic models describe and how efficiently the existing mechanisms can transport the significantly more variable H.264/AVC video traffic. If necessary the existing traffic models and transport mechanisms need to be extended to accommodate the unprecedented variability of the H.264/AVC video traffic.



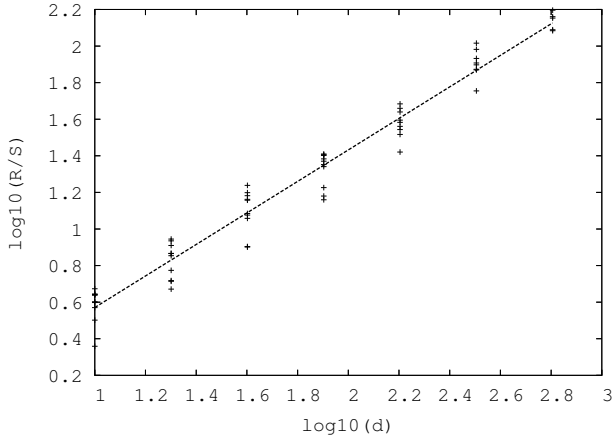
(a) $QP = 24$



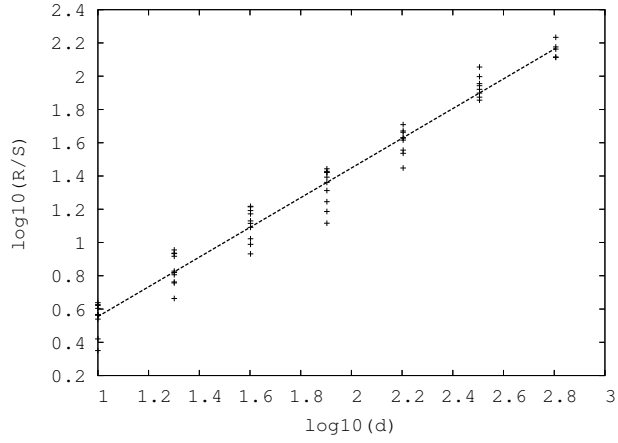
(b) $QP = 38$



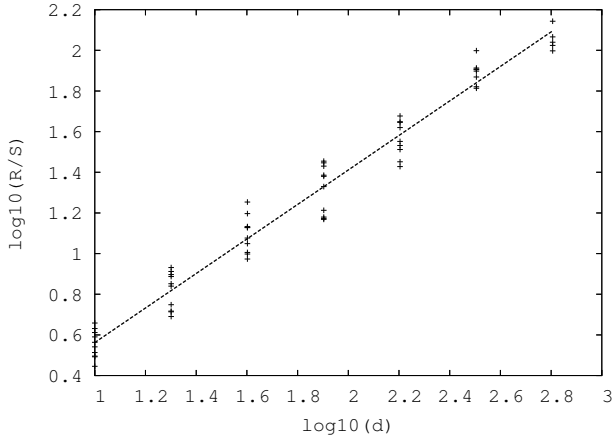
(c) $QP = 28$



(d) $QP = 42$

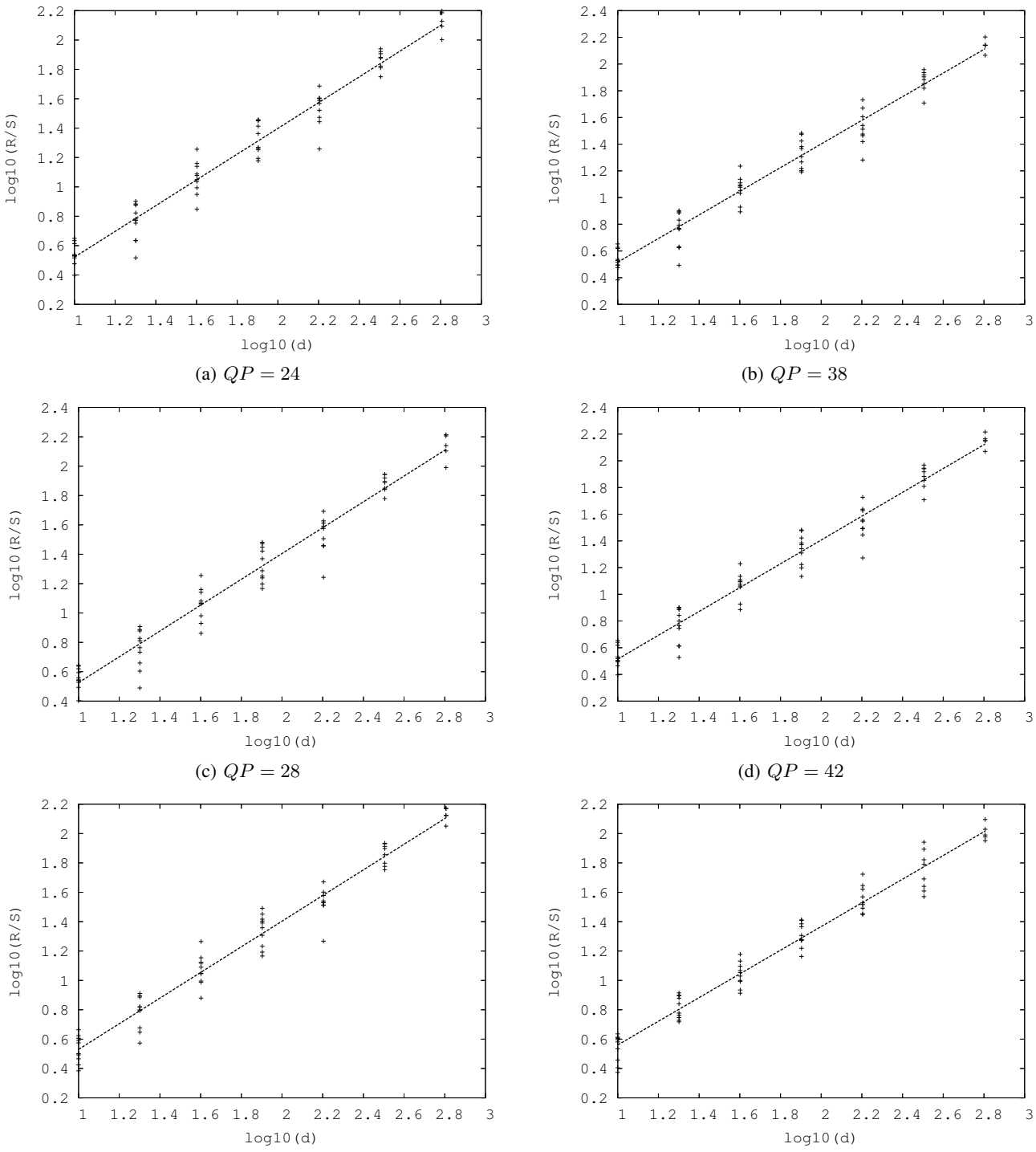


(e) $q = 4$



(f) $q = 28$

Fig. 11. Pox diagrams of R/S with agg. level $a = 48$ for *Silence of the Lambs* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.

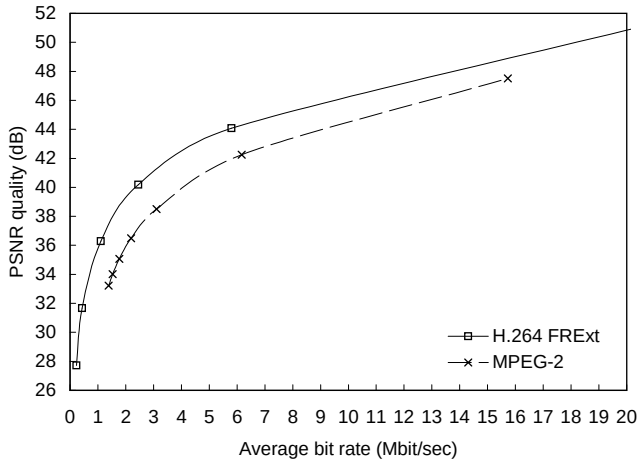


(a) $QP = 24$ (b) $QP = 38$

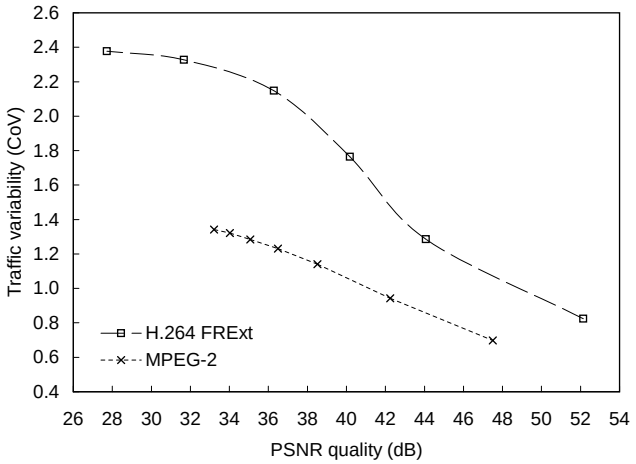
(c) $QP = 28$ (d) $QP = 42$

(e) $q = 4$ (f) $q = 28$

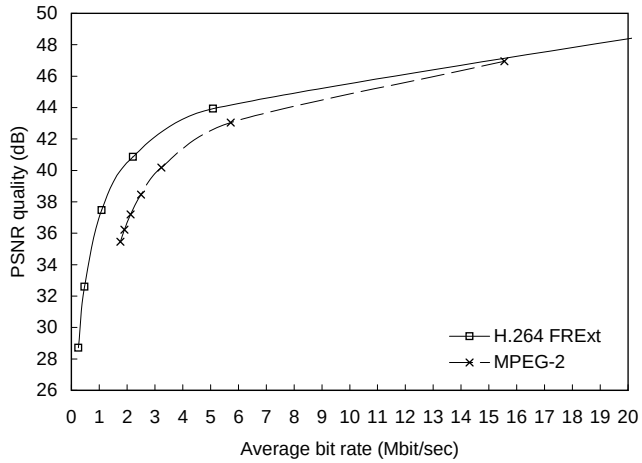
Fig. 12. Pox diagrams of R/S with agg. level $a = 48$ for *Star Wars 4* G16-B3 encodings. (a)(b) H.264/AVC; (c)(d) H.264 SVC; (e)(f) MPEG–4 Part 2.



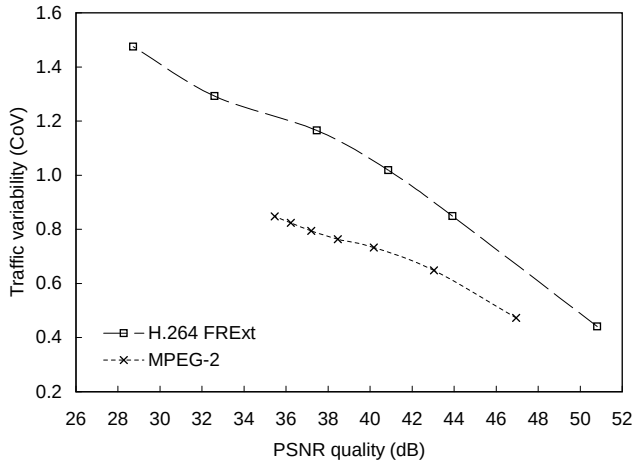
(a) RD graph for *Sony Demo*



(b) VD graph for *Sony Demo*

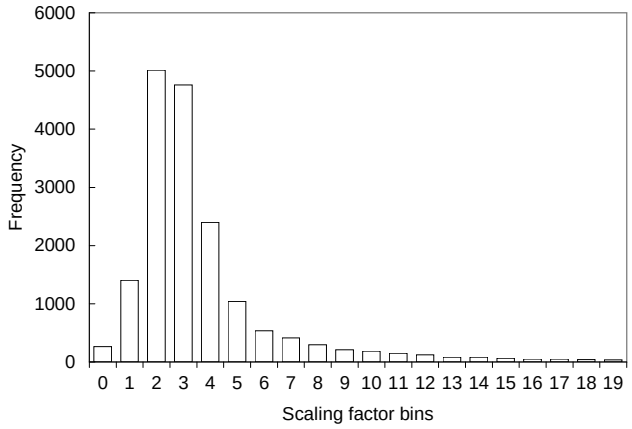


(c) RD graph for *Terminator 2*

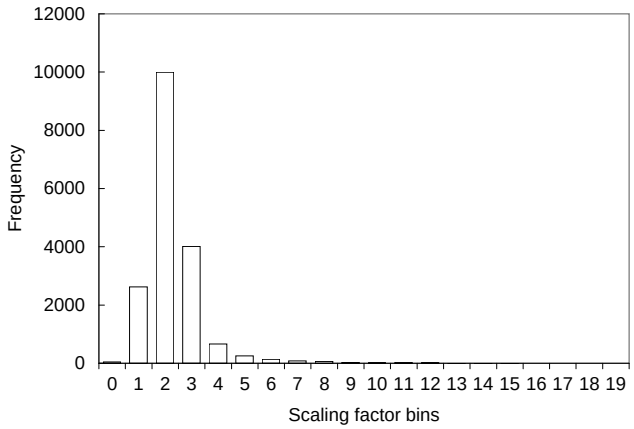


(d) VD graph for *Terminator 2*

Fig. 13. Rate-distortion (RD) and rate variability-distortion (VD) graphs for two 10 min. HD sequences.



(a) *Sony Demo*



(b) *Terminator 2*

Fig. 14. CIF-to-HD frame size scaling factor histograms.

APPENDIX I
FRAME SIZE STATISTICS

A. H.264/AVC

TABLE VII: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:H.264	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B1F10	*Sony Demo*	9.141	16.636	0.867	6.261	3.993	24.996
CIFG16B1F16	*Sony Demo*	18.411	8.259	1.144	7.937	1.982	15.732
CIFG16B1F22	*Sony Demo*	39.085	3.891	1.525	11.208	0.934	10.466
CIFG16B1F24	*Sony Demo*	51.383	2.959	1.671	12.729	0.710	9.041
CIFG16B1F28	*Sony Demo*	86.481	1.758	1.951	15.758	0.422	6.650
CIFG16B1F34	*Sony Demo*	193.450	0.786	2.321	20.464	0.189	3.861
CIFG16B1F38	*Sony Demo*	338.435	0.449	2.465	23.351	0.108	2.518
CIFG16B1F42	*Sony Demo*	578.462	0.263	2.486	25.251	0.063	1.593
CIFG16B1F48	*Sony Demo*	1275.499	0.119	2.272	24.216	0.029	0.693
CIFG16B1F10	*Silence of the Lambs*	19.283	7.886	1.101	10.365	1.893	19.616
CIFG16B1F16	*Silence of the Lambs*	49.090	3.098	1.551	16.676	0.743	12.397
CIFG16B1F22	*Silence of the Lambs*	111.724	1.361	1.933	26.107	0.327	8.528
CIFG16B1F24	*Silence of the Lambs*	146.005	1.041	2.046	29.609	0.250	7.401
CIFG16B1F28	*Silence of the Lambs*	240.138	0.633	2.233	36.345	0.152	5.524
CIFG16B1F34	*Silence of the Lambs*	496.635	0.306	2.363	42.608	0.073	3.131
CIFG16B1F38	*Silence of the Lambs*	798.554	0.190	2.304	42.762	0.046	1.954
CIFG16B1F42	*Silence of the Lambs*	1251.794	0.121	2.165	39.069	0.029	1.139
CIFG16B1F48	*Silence of the Lambs*	2368.749	0.064	1.834	28.366	0.015	0.437
CIFG16B1F10	*Star Wars 4*	20.853	7.292	0.995	7.183	1.750	12.571
CIFG16B1F16	*Star Wars 4*	49.005	3.103	1.314	10.140	0.745	7.551
CIFG16B1F22	*Star Wars 4*	106.082	1.433	1.550	13.198	0.344	4.541
CIFG16B1F24	*Star Wars 4*	137.590	1.105	1.624	13.894	0.265	3.685
CIFG16B1F28	*Star Wars 4*	224.245	0.678	1.745	15.413	0.163	2.508
CIFG16B1F34	*Star Wars 4*	461.962	0.329	1.872	19.452	0.079	1.537
CIFG16B1F38	*Star Wars 4*	741.931	0.205	1.881	20.931	0.049	1.030
CIFG16B1F42	*Star Wars 4*	1155.425	0.132	1.859	22.423	0.032	0.708
CIFG16B1F48	*Star Wars 4*	2126.095	0.072	1.709	24.174	0.017	0.415
CIFG16B1F10	*Tokyo Olympics*	9.965	15.260	0.717	6.240	3.662	22.853
CIFG16B1F16	*Tokyo Olympics*	21.709	7.005	0.942	8.890	1.681	14.945
CIFG16B1F22	*Tokyo Olympics*	52.478	2.898	1.264	13.856	0.695	9.636
CIFG16B1F24	*Tokyo Olympics*	69.361	2.192	1.357	16.170	0.526	8.508
CIFG16B1F28	*Tokyo Olympics*	114.603	1.327	1.511	20.840	0.318	6.636
CIFG16B1F34	*Tokyo Olympics*	239.314	0.635	1.668	27.247	0.152	4.155
CIFG16B1F38	*Tokyo Olympics*	391.139	0.389	1.684	28.654	0.093	2.674
CIFG16B1F42	*Tokyo Olympics*	635.031	0.239	1.658	27.683	0.057	1.591
CIFG16B1F48	*Tokyo Olympics*	1346.388	0.113	1.555	17.859	0.027	0.484
CIFG16B1F10	*NBC 12 News*	5.224	29.108	0.337	3.032	6.986	21.181
CIFG16B1F16	*NBC 12 News*	11.376	13.368	0.583	4.220	3.208	13.540
CIFG16B1F22	*NBC 12 News*	30.722	4.950	0.978	7.279	1.188	8.646
CIFG16B1F24	*NBC 12 News*	43.009	3.536	1.123	8.766	0.849	7.439
CIFG16B1F28	*NBC 12 News*	76.918	1.977	1.372	11.450	0.474	5.433
CIFG16B1F34	*NBC 12 News*	171.039	0.889	1.657	15.688	0.213	3.348
CIFG16B1F38	*NBC 12 News*	287.459	0.529	1.766	18.443	0.127	2.341
CIFG16B1F42	*NBC 12 News*	473.250	0.321	1.826	20.861	0.077	1.609
CIFG16B1F48	*NBC 12 News*	1016.144	0.150	1.854	23.415	0.036	0.841

TABLE VIII: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:H.264	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B3F10	*Sony Demo*	9.344	16.273	0.867	6.398	3.906	24.987
CIFG16B3F16	*Sony Demo*	19.185	7.926	1.168	8.357	1.902	15.898
CIFG16B3F22	*Sony Demo*	42.471	3.580	1.651	12.235	0.859	10.514
CIFG16B3F24	*Sony Demo*	56.269	2.702	1.836	14.018	0.649	9.092
CIFG16B3F28	*Sony Demo*	95.035	1.600	2.168	17.412	0.384	6.687
CIFG16B3F34	*Sony Demo*	208.770	0.728	2.547	22.286	0.175	3.896
CIFG16B3F38	*Sony Demo*	359.490	0.423	2.667	25.009	0.102	2.539
CIFG16B3F42	*Sony Demo*	611.798	0.249	2.682	27.093	0.060	1.616
CIFG16B3F48	*Sony Demo*	1371.513	0.111	2.485	26.192	0.027	0.697

TABLE VIII: *continued*

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B3F10	*Silence of the Lambs*	20.464	7.431	1.133	11.066	1.783	19.735
CIFG16B3F16	*Silence of the Lambs*	51.596	2.947	1.606	17.641	0.707	12.478
CIFG16B3F22	*Silence of the Lambs*	117.303	1.296	2.016	27.627	0.311	8.595
CIFG16B3F24	*Silence of the Lambs*	153.328	0.992	2.140	31.319	0.238	7.455
CIFG16B3F28	*Silence of the Lambs*	252.882	0.601	2.345	38.578	0.144	5.568
CIFG16B3F34	*Silence of the Lambs*	529.695	0.287	2.516	45.991	0.069	3.169
CIFG16B3F38	*Silence of the Lambs*	854.575	0.178	2.469	46.594	0.043	1.990
CIFG16B3F42	*Silence of the Lambs*	1353.831	0.112	2.346	43.242	0.027	1.166
CIFG16B3F48	*Silence of the Lambs*	2555.718	0.059	1.988	31.429	0.014	0.449
CIFG16B3F10	*Star Wars 4*	22.415	6.784	1.054	7.809	1.628	12.714
CIFG16B3F16	*Star Wars 4*	51.085	2.977	1.365	10.979	0.714	7.843
CIFG16B3F22	*Star Wars 4*	110.031	1.382	1.610	13.825	0.332	4.585
CIFG16B3F24	*Star Wars 4*	142.952	1.064	1.692	14.661	0.255	3.743
CIFG16B3F28	*Star Wars 4*	234.440	0.649	1.834	16.188	0.156	2.520
CIFG16B3F34	*Star Wars 4*	487.768	0.312	1.990	20.766	0.075	1.554
CIFG16B3F38	*Star Wars 4*	781.480	0.195	1.998	22.299	0.047	1.041
CIFG16B3F42	*Star Wars 4*	1221.070	0.125	1.979	23.745	0.030	0.710
CIFG16B3F48	*Star Wars 4*	2248.571	0.068	1.814	25.582	0.016	0.415
CIFG16B3F10	*Tokyo Olympics*	9.828	15.472	0.631	6.177	3.713	22.936
CIFG16B3F16	*Tokyo Olympics*	22.449	6.774	0.926	9.222	1.626	14.993
CIFG16B3F22	*Tokyo Olympics*	54.246	2.803	1.279	14.398	0.673	9.687
CIFG16B3F24	*Tokyo Olympics*	71.673	2.122	1.382	16.824	0.509	8.567
CIFG16B3F28	*Tokyo Olympics*	119.314	1.274	1.561	21.852	0.306	6.684
CIFG16B3F34	*Tokyo Olympics*	252.970	0.601	1.767	28.994	0.144	4.183
CIFG16B3F38	*Tokyo Olympics*	416.395	0.365	1.810	30.921	0.088	2.710
CIFG16B3F42	*Tokyo Olympics*	687.512	0.221	1.820	30.527	0.053	1.620
CIFG16B3F48	*Tokyo Olympics*	1504.303	0.101	1.764	20.121	0.024	0.488
CIFG16B3F10	*NBC 12 News*	5.513	27.584	0.345	3.291	6.620	21.786
CIFG16B3F16	*NBC 12 News*	12.312	12.351	0.611	4.805	2.964	14.244
CIFG16B3F22	*NBC 12 News*	33.566	4.530	1.057	7.994	1.087	8.692
CIFG16B3F24	*NBC 12 News*	46.500	3.270	1.205	9.525	0.785	7.476
CIFG16B3F28	*NBC 12 News*	83.141	1.829	1.478	12.474	0.439	5.476
CIFG16B3F34	*NBC 12 News*	184.854	0.823	1.797	17.190	0.197	3.394
CIFG16B3F38	*NBC 12 News*	308.086	0.494	1.907	19.962	0.118	2.365
CIFG16B3F42	*NBC 12 News*	508.817	0.299	1.978	22.606	0.072	1.621
CIFG16B3F48	*NBC 12 News*	1122.126	0.136	2.064	26.027	0.033	0.846

TABLE IX: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7F10	*Sony Demo*	8.924	17.040	0.821	5.939	4.090	24.289
CIFG16B7F16	*Sony Demo*	18.203	8.354	1.096	7.815	2.005	15.669
CIFG16B7F22	*Sony Demo*	40.296	3.774	1.559	11.781	0.906	10.670
CIFG16B7F24	*Sony Demo*	53.696	2.832	1.753	13.588	0.680	9.235
CIFG16B7F28	*Sony Demo*	92.657	1.641	2.137	17.342	0.394	6.830
CIFG16B7F34	*Sony Demo*	204.888	0.742	2.571	22.535	0.178	4.014
CIFG16B7F38	*Sony Demo*	348.448	0.436	2.683	25.085	0.105	2.627
CIFG16B7F42	*Sony Demo*	594.149	0.256	2.725	27.773	0.061	1.706
CIFG16B7F48	*Sony Demo*	1354.570	0.112	2.550	28.372	0.027	0.764
CIFG16B7F10	*Silence of the Lambs*	19.730	7.707	1.070	10.850	1.850	20.069
CIFG16B7F16	*Silence of the Lambs*	49.009	3.103	1.527	17.082	0.745	12.720
CIFG16B7F22	*Silence of the Lambs*	110.425	1.377	1.927	26.436	0.331	8.737
CIFG16B7F24	*Silence of the Lambs*	144.642	1.051	2.057	30.149	0.252	7.607
CIFG16B7F28	*Silence of the Lambs*	239.732	0.634	2.271	37.482	0.152	5.706
CIFG16B7F34	*Silence of the Lambs*	511.682	0.297	2.481	46.059	0.071	3.285
CIFG16B7F38	*Silence of the Lambs*	834.409	0.182	2.466	47.530	0.044	2.079
CIFG16B7F42	*Silence of the Lambs*	1347.116	0.113	2.382	45.446	0.027	1.231
CIFG16B7F48	*Silence of the Lambs*	2648.509	0.057	2.079	34.381	0.014	0.474
CIFG16B7F10	*Star Wars 4*	21.912	6.940	0.992	7.299	1.666	12.156
CIFG16B7F16	*Star Wars 4*	48.959	3.106	1.289	10.353	0.745	7.718
CIFG16B7F22	*Star Wars 4*	104.149	1.460	1.528	13.413	0.350	4.700
CIFG16B7F24	*Star Wars 4*	135.291	1.124	1.609	14.245	0.270	3.843
CIFG16B7F28	*Star Wars 4*	223.113	0.682	1.761	15.661	0.164	2.562
CIFG16B7F34	*Star Wars 4*	470.145	0.323	1.942	20.402	0.078	1.584
CIFG16B7F38	*Star Wars 4*	753.762	0.202	1.958	21.994	0.048	1.065

TABLE IX: *continued*

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7F42	*Star Wars 4*	1187.988	0.128	1.945	23.953	0.031	0.736
CIFG16B7F48	*Star Wars 4*	2247.376	0.068	1.811	26.942	0.016	0.438
CIFG16B7F10	*Tokyo Olympics*	9.355	16.255	0.554	5.945	3.901	23.192
CIFG16B7F16	*Tokyo Olympics*	21.280	7.146	0.847	8.871	1.715	15.213
CIFG16B7F22	*Tokyo Olympics*	50.271	3.025	1.181	13.493	0.726	9.795
CIFG16B7F24	*Tokyo Olympics*	66.184	2.298	1.278	15.736	0.551	8.677
CIFG16B7F28	*Tokyo Olympics*	110.513	1.376	1.449	20.595	0.330	6.801
CIFG16B7F34	*Tokyo Olympics*	237.809	0.639	1.668	28.076	0.153	4.309
CIFG16B7F38	*Tokyo Olympics*	395.093	0.385	1.736	30.534	0.092	2.820
CIFG16B7F42	*Tokyo Olympics*	667.827	0.228	1.794	31.278	0.055	1.709
CIFG16B7F48	*Tokyo Olympics*	1544.661	0.098	1.828	22.835	0.024	0.540
CIFG16B7F10	*NBC 12 News*	5.542	27.440	0.330	3.396	6.586	22.366
CIFG16B7F16	*NBC 12 News*	12.265	12.398	0.581	4.898	2.975	14.574
CIFG16B7F22	*NBC 12 News*	32.846	4.630	1.019	7.957	1.111	8.841
CIFG16B7F24	*NBC 12 News*	45.165	3.367	1.162	9.444	0.808	7.631
CIFG16B7F28	*NBC 12 News*	80.668	1.885	1.433	12.392	0.452	5.606
CIFG16B7F34	*NBC 12 News*	181.065	0.840	1.778	17.187	0.202	3.464
CIFG16B7F38	*NBC 12 News*	300.906	0.505	1.902	20.028	0.121	2.429
CIFG16B7F42	*NBC 12 News*	501.838	0.303	1.996	23.062	0.073	1.677
CIFG16B7F48	*NBC 12 News*	1154.515	0.132	2.160	28.251	0.032	0.893

TABLE X: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B15F10	*Sony Demo*	8.168	18.618	0.753	5.520	4.468	24.664
CIFG16B15F16	*Sony Demo*	16.357	9.297	0.987	7.171	2.231	16.001
CIFG16B15F22	*Sony Demo*	35.390	4.297	1.379	10.526	1.031	10.855
CIFG16B15F24	*Sony Demo*	46.861	3.245	1.545	12.081	0.779	9.408
CIFG16B15F28	*Sony Demo*	81.860	1.858	1.907	15.699	0.446	6.999
CIFG16B15F34	*Sony Demo*	188.486	0.807	2.417	21.307	0.194	4.126
CIFG16B15F38	*Sony Demo*	323.172	0.471	2.582	24.177	0.113	2.730
CIFG16B15F42	*Sony Demo*	554.687	0.274	2.669	27.252	0.066	1.793
CIFG16B15F48	*Sony Demo*	1303.782	0.117	2.585	30.249	0.028	0.847
CIFG16B15F10	*Silence of the Lambs*	18.123	8.391	0.974	10.132	2.014	20.403
CIFG16B15F16	*Silence of the Lambs*	44.176	3.442	1.387	15.743	0.826	13.006
CIFG16B15F22	*Silence of the Lambs*	97.844	1.554	1.742	23.859	0.373	8.899
CIFG16B15F24	*Silence of the Lambs*	127.886	1.189	1.862	27.245	0.285	7.775
CIFG16B15F28	*Silence of the Lambs*	213.120	0.714	2.068	34.253	0.171	5.866
CIFG16B15F34	*Silence of the Lambs*	463.795	0.328	2.304	43.322	0.079	3.409
CIFG16B15F38	*Silence of the Lambs*	769.931	0.198	2.329	46.424	0.047	2.201
CIFG16B15F42	*Silence of the Lambs*	1285.255	0.118	2.304	46.765	0.028	1.328
CIFG16B15F48	*Silence of the Lambs*	2715.675	0.056	2.091	38.361	0.013	0.516
CIFG16B15F10	*Star Wars 4*	19.960	7.618	0.865	6.282	1.828	11.485
CIFG16B15F16	*Star Wars 4*	43.940	3.461	1.118	9.468	0.831	7.864
CIFG16B15F22	*Star Wars 4*	91.783	1.657	1.336	12.117	0.398	4.818
CIFG16B15F24	*Star Wars 4*	118.826	1.280	1.413	12.844	0.307	3.945
CIFG16B15F28	*Star Wars 4*	197.690	0.769	1.573	14.141	0.185	2.610
CIFG16B15F34	*Star Wars 4*	423.124	0.359	1.772	18.935	0.086	1.633
CIFG16B15F38	*Star Wars 4*	686.177	0.222	1.809	20.771	0.053	1.105
CIFG16B15F42	*Star Wars 4*	1100.632	0.138	1.814	22.756	0.033	0.755
CIFG16B15F48	*Star Wars 4*	2185.953	0.070	1.719	23.460	0.017	0.392
CIFG16B15F10	*Tokyo Olympics*	8.819	17.242	0.503	5.654	4.138	23.399
CIFG16B15F16	*Tokyo Olympics*	19.599	7.759	0.772	8.292	1.862	15.441
CIFG16B15F22	*Tokyo Olympics*	44.547	3.414	1.066	12.103	0.819	9.915
CIFG16B15F24	*Tokyo Olympics*	58.093	2.618	1.150	14.007	0.628	8.799
CIFG16B15F28	*Tokyo Olympics*	96.041	1.583	1.288	18.200	0.380	6.916
CIFG16B15F34	*Tokyo Olympics*	207.493	0.733	1.474	25.121	0.176	4.418
CIFG16B15F38	*Tokyo Olympics*	349.270	0.435	1.547	28.123	0.104	2.939
CIFG16B15F42	*Tokyo Olympics*	610.809	0.249	1.637	30.283	0.060	1.809
CIFG16B15F48	*Tokyo Olympics*	1522.456	0.100	1.779	27.413	0.024	0.657
CIFG16B15F10	*NBC 12 News*	5.457	27.866	0.307	3.150	6.688	21.068
CIFG16B15F16	*NBC 12 News*	11.823	12.862	0.529	4.344	3.087	13.410
CIFG16B15F22	*NBC 12 News*	30.526	4.982	0.924	7.559	1.196	9.038
CIFG16B15F24	*NBC 12 News*	41.489	3.665	1.051	8.860	0.880	7.794
CIFG16B15F28	*NBC 12 News*	73.177	2.078	1.285	11.566	0.499	5.768

TABLE X: *continued*

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B15F34	*NBC 12 News*	165.454	0.919	1.618	16.192	0.221	3.572
CIFG16B15F38	*NBC 12 News*	278.300	0.546	1.766	19.248	0.131	2.524
CIFG16B15F42	*NBC 12 News*	477.477	0.318	1.920	22.859	0.076	1.747
CIFG16B15F48	*NBC 12 News*	1148.458	0.132	2.162	30.059	0.032	0.955

TABLE XI: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG12B2F10	*Sony Demo*	9.071	16.763	0.897	6.179	4.023	24.859
CIFG12B2F16	*Sony Demo*	17.769	8.558	1.189	7.733	2.054	15.883
CIFG12B2F22	*Sony Demo*	37.202	4.088	1.610	10.631	0.981	10.429
CIFG12B2F24	*Sony Demo*	48.549	3.132	1.771	11.995	0.752	9.017
CIFG12B2F28	*Sony Demo*	80.193	1.896	2.055	14.567	0.455	6.629
CIFG12B2F34	*Sony Demo*	173.714	0.875	2.394	18.456	0.210	3.877
CIFG12B2F38	*Sony Demo*	298.751	0.509	2.507	20.625	0.122	2.520
CIFG12B2F42	*Sony Demo*	506.810	0.300	2.518	22.410	0.072	1.614
CIFG12B2F48	*Sony Demo*	1139.767	0.133	2.341	21.534	0.032	0.690
CIFG12B2F10	*Silence of the Lambs*	19.976	7.612	1.127	10.543	1.827	19.261
CIFG12B2F16	*Silence of the Lambs*	47.486	3.202	1.570	16.161	0.769	12.420
CIFG12B2F22	*Silence of the Lambs*	105.314	1.444	1.956	24.624	0.347	8.533
CIFG12B2F24	*Silence of the Lambs*	136.725	1.112	2.072	27.808	0.267	7.423
CIFG12B2F28	*Silence of the Lambs*	222.963	0.682	2.266	33.838	0.164	5.539
CIFG12B2F34	*Silence of the Lambs*	457.880	0.332	2.407	39.623	0.080	3.158
CIFG12B2F38	*Silence of the Lambs*	738.157	0.206	2.367	39.756	0.049	1.966
CIFG12B2F42	*Silence of the Lambs*	1165.032	0.131	2.247	36.721	0.031	1.150
CIFG12B2F48	*Silence of the Lambs*	2249.622	0.068	1.940	27.280	0.016	0.443
720pG12B2FxT10	*Sony Demo*	14.557	94.962	0.823	5.264	22.791	119.981
720pG12B2FxT22	*Sony Demo*	57.167	24.182	1.285	8.726	5.804	50.643
720pG12B2FxT28	*Sony Demo*	135.109	10.232	1.764	12.971	2.456	31.852
720pG12B2FxT34	*Sony Demo*	298.613	4.629	2.148	16.695	1.111	18.549
720pG12B2FxT38	*Sony Demo*	491.245	2.814	2.302	17.703	0.675	11.956
720pG12B2FxT42	*Sony Demo*	759.335	1.821	2.327	17.497	0.437	7.645
720pG12B2FxT48	*Sony Demo*	1451.768	0.952	2.376	18.826	0.229	4.302
720pG12B2FxT10	*Terminator 2*	11.596	119.212	0.441	3.397	28.611	97.201
720pG12B2FxT22	*Terminator 2*	65.240	21.189	0.849	7.529	5.085	38.289
720pG12B2FxT28	*Terminator 2*	149.813	9.228	1.019	9.809	2.215	21.723
720pG12B2FxT34	*Terminator 2*	304.572	4.539	1.166	10.910	1.089	11.884
720pG12B2FxT38	*Terminator 2*	473.013	2.923	1.214	10.437	0.701	7.321
720pG12B2FxT42	*Terminator 2*	707.077	1.955	1.292	10.875	0.469	5.103
720pG12B2FxT48	*Terminator 2*	1314.063	1.052	1.475	13.398	0.252	3.383

TABLE XII: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:H.264	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B3FRC1	*Sony Demo*	43.986	3.457	1.906	33.652	0.830	27.922
CIFG16B3FRC2	*Sony Demo*	96.475	1.576	2.642	73.719	0.378	27.887
CIFG16B3FRC3	*Sony Demo*	360.472	0.422	3.986	170.161	0.101	17.228
CIFG16B3FRC1	*Silence of the Lambs*	117.273	1.297	1.790	47.386	0.311	14.747
CIFG16B3FRC2	*Silence of the Lambs*	252.737	0.602	2.089	56.518	0.144	8.161
CIFG16B3FRC3	*Silence of the Lambs*	854.164	0.178	2.421	121.499	0.043	5.191
CIFG16B3FRC1	*Star Wars 4*	110.161	1.380	1.784	54.497	0.331	18.054
CIFG16B3FRC2	*Star Wars 4*	233.842	0.650	2.055	64.000	0.156	9.988
CIFG16B3FRC3	*Star Wars 4*	777.023	0.196	2.179	41.098	0.047	1.930
CIFG16B3FRC1	*Tokyo Olympics*	54.211	2.805	1.133	16.696	0.673	11.240
CIFG16B3FRC2	*Tokyo Olympics*	119.213	1.276	1.442	26.653	0.306	8.160
CIFG16B3FRC3	*Tokyo Olympics*	415.861	0.366	1.836	64.426	0.088	5.654
CIFG16B3FRC1	*NBC 12 News*	33.606	4.525	1.007	9.420	1.086	10.230
CIFG16B3FRC2	*NBC 12 News*	83.069	1.831	1.510	16.527	0.439	7.261
CIFG16B3FRC3	*NBC 12 News*	307.709	0.494	2.014	32.933	0.119	3.906

B. MPEG–4 Part 2

TABLE XIII: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:MPEG-4	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B1Mp01	*Sony Demo*	5.392	28.199	0.561	4.495	6.768	30.425
CIFG16B1Mp02	*Sony Demo*	14.157	10.742	0.899	7.212	2.578	18.591
CIFG16B1Mp04	*Sony Demo*	31.348	4.851	1.142	9.440	1.164	10.990
CIFG16B1Mp08	*Sony Demo*	71.791	2.118	1.393	11.807	0.508	6.002
CIFG16B1Mp12	*Sony Demo*	114.210	1.331	1.487	12.953	0.320	4.139
CIFG16B1Mp16	*Sony Demo*	152.519	0.997	1.478	12.882	0.239	3.083
CIFG16B1Mp20	*Sony Demo*	182.553	0.833	1.402	12.058	0.200	2.411
CIFG16B1Mp24	*Sony Demo*	204.697	0.743	1.304	10.952	0.178	1.953
CIFG16B1Mp28	*Sony Demo*	219.719	0.692	1.198	9.733	0.166	1.617
CIFG16B1Mp01	*Silence of the Lambs*	9.790	15.532	0.604	6.093	3.728	22.713
CIFG16B1Mp02	*Silence of the Lambs*	39.997	3.802	1.315	14.624	0.912	13.344
CIFG16B1Mp04	*Silence of the Lambs*	88.819	1.712	1.552	20.767	0.411	8.533
CIFG16B1Mp08	*Silence of the Lambs*	168.371	0.903	1.543	23.124	0.217	5.012
CIFG16B1Mp12	*Silence of the Lambs*	216.859	0.701	1.389	20.564	0.168	3.461
CIFG16B1Mp16	*Silence of the Lambs*	244.165	0.623	1.239	17.344	0.149	2.592
CIFG16B1Mp20	*Silence of the Lambs*	257.130	0.591	1.111	14.405	0.142	2.045
CIFG16B1Mp24	*Silence of the Lambs*	265.086	0.574	1.025	11.973	0.138	1.648
CIFG16B1Mp28	*Silence of the Lambs*	269.393	0.564	0.959	10.102	0.135	1.368
CIFG16B1Mp01	*Star Wars 4*	10.292	14.775	0.463	4.035	3.546	14.307
CIFG16B1Mp02	*Star Wars 4*	39.474	3.852	1.049	9.373	0.925	8.666
CIFG16B1Mp04	*Star Wars 4*	87.848	1.731	1.283	13.682	0.415	5.684
CIFG16B1Mp08	*Star Wars 4*	176.259	0.863	1.387	16.913	0.207	3.502
CIFG16B1Mp12	*Star Wars 4*	240.742	0.632	1.355	16.348	0.152	2.478
CIFG16B1Mp16	*Star Wars 4*	282.815	0.538	1.286	14.886	0.129	1.921
CIFG16B1Mp20	*Star Wars 4*	305.457	0.498	1.197	13.692	0.119	1.636
CIFG16B1Mp24	*Star Wars 4*	321.808	0.473	1.134	13.762	0.113	1.561
CIFG16B1Mp28	*Star Wars 4*	329.936	0.461	1.073	13.524	0.111	1.496
CIFG16B1Mp01	*Tokyo Olympics*	6.360	23.908	0.538	5.277	5.738	30.281
CIFG16B1Mp02	*Tokyo Olympics*	19.603	7.757	0.916	10.026	1.862	18.666
CIFG16B1Mp04	*Tokyo Olympics*	43.488	3.497	1.081	13.459	0.839	11.295
CIFG16B1Mp08	*Tokyo Olympics*	88.103	1.726	1.121	15.325	0.414	6.348
CIFG16B1Mp12	*Tokyo Olympics*	124.521	1.221	1.066	14.990	0.293	4.393
CIFG16B1Mp16	*Tokyo Olympics*	151.607	1.003	0.988	13.950	0.241	3.358
CIFG16B1Mp20	*Tokyo Olympics*	170.237	0.893	0.907	12.393	0.214	2.657
CIFG16B1Mp24	*Tokyo Olympics*	183.965	0.827	0.844	10.795	0.198	2.142
CIFG16B1Mp28	*Tokyo Olympics*	193.221	0.787	0.789	9.292	0.189	1.755
CIFG16B1Mp01	*NBC 12 News*	3.550	42.834	0.226	2.254	10.280	23.177
CIFG16B1Mp02	*NBC 12 News*	10.988	13.839	0.512	4.417	3.321	14.670
CIFG16B1Mp04	*NBC 12 News*	27.270	5.576	0.773	6.820	1.338	9.127
CIFG16B1Mp08	*NBC 12 News*	62.030	2.451	1.021	9.395	0.588	5.528
CIFG16B1Mp12	*NBC 12 News*	93.937	1.619	1.110	10.486	0.389	4.074
CIFG16B1Mp16	*NBC 12 News*	120.462	1.262	1.120	10.761	0.303	3.260
CIFG16B1Mp20	*NBC 12 News*	141.011	1.078	1.086	10.555	0.259	2.732
CIFG16B1Mp24	*NBC 12 News*	156.622	0.971	1.039	10.040	0.233	2.340
CIFG16B1Mp28	*NBC 12 News*	168.090	0.905	0.983	9.400	0.217	2.041

TABLE XIV: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:MPEG-4	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B3Mp01	*Sony Demo*	5.161	29.466	0.528	4.280	7.072	30.268
CIFG16B3Mp02	*Sony Demo*	13.513	11.253	0.839	6.892	2.701	18.614
CIFG16B3Mp04	*Sony Demo*	30.238	5.029	1.081	9.097	1.207	10.979
CIFG16B3Mp08	*Sony Demo*	68.480	2.221	1.312	11.262	0.533	6.002
CIFG16B3Mp12	*Sony Demo*	105.740	1.438	1.362	11.992	0.345	4.139
CIFG16B3Mp16	*Sony Demo*	137.028	1.110	1.314	11.574	0.266	3.083
CIFG16B3Mp20	*Sony Demo*	159.266	0.955	1.210	10.520	0.229	2.411
CIFG16B3Mp24	*Sony Demo*	174.601	0.871	1.101	9.342	0.209	1.953
CIFG16B3Mp28	*Sony Demo*	183.922	0.827	0.991	8.147	0.198	1.617
CIFG16B3Mp01	*Silence of the Lambs*	9.732	15.625	0.614	6.028	3.750	22.605
CIFG16B3Mp02	*Silence of the Lambs*	36.326	4.186	1.222	13.281	1.005	13.344
CIFG16B3Mp04	*Silence of the Lambs*	78.977	1.925	1.411	18.466	0.462	8.533

TABLE XIV: *continued*

Enc. M.	Video	Compr. ratio YUV:MPEG-4	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B3Mp08	*Silence of the Lambs*	139.857	1.087	1.298	19.208	0.261	5.012
CIFG16B3Mp12	*Silence of the Lambs*	171.201	0.888	1.107	16.235	0.213	3.461
CIFG16B3Mp16	*Silence of the Lambs*	187.949	0.809	0.963	13.351	0.194	2.592
CIFG16B3Mp20	*Silence of the Lambs*	194.166	0.783	0.848	10.878	0.188	2.045
CIFG16B3Mp24	*Silence of the Lambs*	198.615	0.766	0.776	8.970	0.184	1.648
CIFG16B3Mp28	*Silence of the Lambs*	200.044	0.760	0.719	7.501	0.182	1.368
CIFG16B3Mp01	*Star Wars 4*	10.281	14.791	0.466	4.101	3.550	14.560
CIFG16B3Mp02	*Star Wars 4*	36.581	4.157	0.973	8.686	0.998	8.666
CIFG16B3Mp04	*Star Wars 4*	80.215	1.896	1.174	12.494	0.455	5.684
CIFG16B3Mp08	*Star Wars 4*	153.091	0.993	1.205	14.689	0.238	3.502
CIFG16B3Mp12	*Star Wars 4*	200.100	0.760	1.129	13.588	0.182	2.478
CIFG16B3Mp16	*Star Wars 4*	229.227	0.663	1.048	12.272	0.159	1.954
CIFG16B3Mp20	*Star Wars 4*	242.029	0.628	0.956	11.619	0.151	1.752
CIFG16B3Mp24	*Star Wars 4*	251.851	0.604	0.899	11.113	0.145	1.610
CIFG16B3Mp28	*Star Wars 4*	257.012	0.592	0.843	10.550	0.142	1.498
CIFG16B3Mp01	*Tokyo Olympics*	5.936	25.617	0.481	4.862	6.148	29.891
CIFG16B3Mp02	*Tokyo Olympics*	17.603	8.638	0.827	8.951	2.073	18.558
CIFG16B3Mp04	*Tokyo Olympics*	38.765	3.923	0.976	11.944	0.941	11.244
CIFG16B3Mp08	*Tokyo Olympics*	77.561	1.961	0.990	13.437	0.471	6.323
CIFG16B3Mp12	*Tokyo Olympics*	108.166	1.406	0.919	13.021	0.337	4.393
CIFG16B3Mp16	*Tokyo Olympics*	130.856	1.162	0.838	12.041	0.279	3.358
CIFG16B3Mp20	*Tokyo Olympics*	145.360	1.046	0.752	10.582	0.251	2.657
CIFG16B3Mp24	*Tokyo Olympics*	157.145	0.968	0.693	9.221	0.232	2.142
CIFG16B3Mp28	*Tokyo Olympics*	164.416	0.925	0.638	7.907	0.222	1.755
CIFG16B3Mp01	*NBC 12 News*	3.567	42.631	0.230	2.324	10.231	23.776
CIFG16B3Mp02	*NBC 12 News*	10.679	14.239	0.499	4.430	3.417	15.141
CIFG16B3Mp04	*NBC 12 News*	26.030	5.842	0.738	6.753	1.402	9.469
CIFG16B3Mp08	*NBC 12 News*	58.234	2.611	0.954	9.189	0.627	5.759
CIFG16B3Mp12	*NBC 12 News*	86.883	1.750	1.016	10.114	0.420	4.248
CIFG16B3Mp16	*NBC 12 News*	109.821	1.385	1.004	10.186	0.332	3.385
CIFG16B3Mp20	*NBC 12 News*	126.739	1.200	0.953	9.835	0.288	2.832
CIFG16B3Mp24	*NBC 12 News*	139.118	1.093	0.895	9.206	0.262	2.415
CIFG16B3Mp28	*NBC 12 News*	147.791	1.029	0.831	8.529	0.247	2.106

TABLE XV: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:MPEG-4	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7Mp01	*Sony Demo*	4.800	31.680	0.497	3.266	7.603	24.834
CIFG16B7Mp02	*Sony Demo*	12.312	12.351	0.768	5.456	2.964	16.173
CIFG16B7Mp04	*Sony Demo*	27.441	5.541	0.978	7.751	1.330	10.308
CIFG16B7Mp08	*Sony Demo*	60.765	2.502	1.155	9.994	0.601	6.002
CIFG16B7Mp12	*Sony Demo*	90.358	1.683	1.150	10.248	0.404	4.139
CIFG16B7Mp16	*Sony Demo*	112.880	1.347	1.065	9.534	0.323	3.083
CIFG16B7Mp20	*Sony Demo*	126.760	1.200	0.942	8.373	0.288	2.411
CIFG16B7Mp24	*Sony Demo*	135.583	1.122	0.832	7.254	0.269	1.953
CIFG16B7Mp28	*Sony Demo*	139.733	1.088	0.727	6.190	0.261	1.617
CIFG16B7Mp01	*Silence of the Lambs*	9.204	16.522	0.603	5.979	3.965	23.709
CIFG16B7Mp02	*Silence of the Lambs*	32.246	4.716	1.123	11.790	1.132	13.344
CIFG16B7Mp04	*Silence of the Lambs*	68.177	2.230	1.249	15.941	0.535	8.533
CIFG16B7Mp08	*Silence of the Lambs*	112.426	1.353	1.046	15.440	0.325	5.012
CIFG16B7Mp12	*Silence of the Lambs*	130.381	1.166	0.828	12.364	0.280	3.461
CIFG16B7Mp16	*Silence of the Lambs*	139.308	1.092	0.690	9.896	0.262	2.592
CIFG16B7Mp20	*Silence of the Lambs*	140.740	1.080	0.584	7.885	0.259	2.045
CIFG16B7Mp24	*Silence of the Lambs*	142.877	1.064	0.522	6.453	0.255	1.648
CIFG16B7Mp28	*Silence of the Lambs*	142.295	1.069	0.471	5.336	0.256	1.368
CIFG16B7Mp01	*Star Wars 4*	9.675	15.717	0.443	4.266	3.772	16.092
CIFG16B7Mp02	*Star Wars 4*	32.616	4.662	0.866	8.082	1.119	9.043
CIFG16B7Mp04	*Star Wars 4*	69.510	2.188	1.007	10.906	0.525	5.726
CIFG16B7Mp08	*Star Wars 4*	124.371	1.223	0.953	12.231	0.293	3.589
CIFG16B7Mp12	*Star Wars 4*	153.180	0.993	0.832	11.818	0.238	2.816
CIFG16B7Mp16	*Star Wars 4*	170.799	0.890	0.745	10.663	0.214	2.278
CIFG16B7Mp20	*Star Wars 4*	176.689	0.861	0.656	9.398	0.207	1.941
CIFG16B7Mp24	*Star Wars 4*	179.447	0.847	0.606	8.550	0.203	1.739
CIFG16B7Mp28	*Star Wars 4*	183.858	0.827	0.556	7.803	0.198	1.549
CIFG16B7Mp01	*Tokyo Olympics*	5.528	27.508	0.451	4.520	6.602	29.843

TABLE XV: *continued*

Enc. M.	Video	Compr. ratio YUV:MPEG-4	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7Mp02	*Tokyo Olympics*	15.781	9.636	0.767	7.975	2.313	18.443
CIFG16B7Mp04	*Tokyo Olympics*	34.241	4.441	0.892	10.536	1.066	11.229
CIFG16B7Mp08	*Tokyo Olympics*	67.266	2.261	0.868	11.675	0.543	6.334
CIFG16B7Mp12	*Tokyo Olympics*	91.256	1.666	0.762	10.985	0.400	4.393
CIFG16B7Mp16	*Tokyo Olympics*	109.426	1.390	0.672	10.069	0.334	3.358
CIFG16B7Mp20	*Tokyo Olympics*	118.838	1.280	0.578	8.651	0.307	2.657
CIFG16B7Mp24	*Tokyo Olympics*	130.028	1.169	0.526	7.630	0.281	2.142
CIFG16B7Mp28	*Tokyo Olympics*	134.392	1.131	0.468	6.463	0.272	1.755
CIFG16B7Mp01	*NBC 12 News*	3.506	43.368	0.229	2.382	10.408	24.793
CIFG16B7Mp02	*NBC 12 News*	10.140	14.996	0.477	4.213	3.599	15.162
CIFG16B7Mp04	*NBC 12 News*	24.215	6.280	0.688	6.305	1.507	9.502
CIFG16B7Mp08	*NBC 12 News*	52.748	2.883	0.856	8.375	0.692	5.794
CIFG16B7Mp12	*NBC 12 News*	76.739	1.982	0.877	9.007	0.476	4.284
CIFG16B7Mp16	*NBC 12 News*	94.874	1.603	0.836	8.892	0.385	3.420
CIFG16B7Mp20	*NBC 12 News*	107.361	1.416	0.767	8.383	0.340	2.850
CIFG16B7Mp24	*NBC 12 News*	115.978	1.311	0.698	7.718	0.315	2.429
CIFG16B7Mp28	*NBC 12 News*	121.477	1.252	0.627	7.078	0.300	2.126

TABLE XVI: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:MPEG-4	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B15Mp01	*Sony Demo*	4.366	34.828	0.469	2.914	8.359	24.354
CIFG16B15Mp02	*Sony Demo*	10.941	13.899	0.703	4.848	3.336	16.173
CIFG16B15Mp04	*Sony Demo*	24.019	6.331	0.868	6.784	1.519	10.308
CIFG16B15Mp08	*Sony Demo*	51.566	2.949	0.969	8.481	0.708	6.002
CIFG16B15Mp12	*Sony Demo*	73.838	2.059	0.910	8.374	0.494	4.139
CIFG16B15Mp16	*Sony Demo*	89.450	1.700	0.801	7.555	0.408	3.083
CIFG16B15Mp20	*Sony Demo*	98.040	1.551	0.676	6.476	0.372	2.411
CIFG16B15Mp24	*Sony Demo*	103.532	1.469	0.580	5.539	0.353	1.953
CIFG16B15Mp28	*Sony Demo*	105.699	1.439	0.490	4.682	0.345	1.617
CIFG16B15Mp01	*Silence of the Lambs*	8.575	17.733	0.582	5.142	4.256	21.886
CIFG16B15Mp02	*Silence of the Lambs*	28.599	5.317	1.023	10.456	1.276	13.344
CIFG16B15Mp04	*Silence of the Lambs*	57.845	2.629	1.062	13.525	0.631	8.533
CIFG16B15Mp08	*Silence of the Lambs*	88.403	1.720	0.774	12.141	0.413	5.012
CIFG16B15Mp12	*Silence of the Lambs*	98.100	1.550	0.539	9.303	0.372	3.461
CIFG16B15Mp16	*Silence of the Lambs*	102.395	1.485	0.383	7.274	0.356	2.592
CIFG16B15Mp20	*Silence of the Lambs*	103.130	1.474	0.315	5.778	0.354	2.045
CIFG16B15Mp24	*Silence of the Lambs*	105.244	1.445	0.276	4.753	0.347	1.648
CIFG16B15Mp28	*Silence of the Lambs*	105.015	1.448	0.241	3.938	0.348	1.368
CIFG16B15Mp01	*Star Wars 4*	8.804	17.273	0.416	6.122	4.146	25.379
CIFG16B15Mp02	*Star Wars 4*	28.189	5.394	0.763	12.066	1.295	15.621
CIFG16B15Mp04	*Star Wars 4*	57.107	2.663	0.823	15.296	0.639	9.775
CIFG16B15Mp08	*Star Wars 4*	94.892	1.602	0.681	15.439	0.385	5.938
CIFG16B15Mp12	*Star Wars 4*	110.322	1.378	0.515	11.091	0.331	3.669
CIFG16B15Mp16	*Star Wars 4*	120.986	1.257	0.421	10.350	0.302	3.122
CIFG16B15Mp20	*Star Wars 4*	126.412	1.203	0.345	7.735	0.289	2.233
CIFG16B15Mp24	*Star Wars 4*	125.102	1.216	0.300	6.303	0.292	1.839
CIFG16B15Mp28	*Star Wars 4*	131.158	1.159	0.273	5.642	0.278	1.570
CIFG16B15Mp01	*NBC 12 News*	3.407	44.627	0.227	2.263	10.710	24.235
CIFG16B15Mp02	*NBC 12 News*	9.561	15.905	0.453	3.615	3.817	13.800
CIFG16B15Mp04	*NBC 12 News*	22.346	6.805	0.637	5.313	1.633	8.678
CIFG16B15Mp08	*NBC 12 News*	46.742	3.253	0.737	6.911	0.781	5.396
CIFG16B15Mp12	*NBC 12 News*	65.813	2.311	0.710	7.297	0.555	4.046
CIFG16B15Mp16	*NBC 12 News*	79.432	1.914	0.642	7.096	0.459	3.260
CIFG16B15Mp20	*NBC 12 News*	88.440	1.719	0.563	6.620	0.413	2.732
CIFG16B15Mp24	*NBC 12 News*	94.493	1.609	0.492	6.057	0.386	2.340
CIFG16B15Mp28	*NBC 12 News*	98.430	1.545	0.427	5.505	0.371	2.041

TABLE XVII: *continued*

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:MPEG-4	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]

TABLE XVII: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:MPEG-4	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG12B2Mp01	*Sony Demo*	5.248	28.975	0.561	4.800	6.954	33.382
CIFG12B2Mp02	*Sony Demo*	13.679	11.117	0.919	7.392	2.668	19.721
CIFG12B2Mp04	*Sony Demo*	30.217	5.032	1.200	9.339	1.208	11.279
CIFG12B2Mp08	*Sony Demo*	67.421	2.255	1.458	11.088	0.541	6.002
CIFG12B2Mp12	*Sony Demo*	103.800	1.465	1.513	11.772	0.352	4.139
CIFG12B2Mp16	*Sony Demo*	134.801	1.128	1.459	11.386	0.271	3.083
CIFG12B2Mp20	*Sony Demo*	157.314	0.967	1.341	10.391	0.232	2.411
CIFG12B2Mp24	*Sony Demo*	173.253	0.878	1.215	9.288	0.211	1.956
CIFG12B2Mp28	*Sony Demo*	183.325	0.829	1.087	8.121	0.199	1.617
CIFG12B2Mp01	*Silence of the Lambs*	9.960	15.268	0.630	6.177	3.664	22.636
CIFG12B2Mp02	*Silence of the Lambs*	36.853	4.126	1.273	13.454	0.990	13.323
CIFG12B2Mp04	*Silence of the Lambs*	79.650	1.909	1.487	18.618	0.458	8.531
CIFG12B2Mp08	*Silence of the Lambs*	142.566	1.067	1.404	19.624	0.256	5.023
CIFG12B2Mp12	*Silence of the Lambs*	176.842	0.860	1.212	16.801	0.206	3.467
CIFG12B2Mp16	*Silence of the Lambs*	195.606	0.777	1.055	13.912	0.187	2.596
CIFG12B2Mp20	*Silence of the Lambs*	203.080	0.749	0.924	11.377	0.180	2.045
CIFG12B2Mp24	*Silence of the Lambs*	208.218	0.730	0.839	9.417	0.175	1.650
CIFG12B2Mp28	*Silence of the Lambs*	210.166	0.724	0.772	7.921	0.174	1.375

TABLE XVIII: Overview of frame size statistics of single–layer traces.

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:MPEG-4	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B3MpRC1	*Sony Demo*	22.863	6.651	1.863	13.838	1.596	22.089
CIFG16B3MpRC2	*Sony Demo*	69.949	2.174	2.536	25.520	0.522	13.315
CIFG16B3MpRC3	*Sony Demo*	157.700	0.964	1.271	24.789	0.231	5.737
CIFG16B3MpRC1	*Silence of the Lambs*	78.962	1.926	1.100	38.580	0.462	17.831
CIFG16B3MpRC2	*Silence of the Lambs*	139.794	1.088	1.116	37.476	0.261	9.784
CIFG16B3MpRC3	*Silence of the Lambs*	182.490	0.833	0.964	48.921	0.200	9.784
CIFG16B3MpRC1	*Star Wars 4*	80.196	1.896	1.167	17.576	0.455	7.998
CIFG16B3MpRC2	*Star Wars 4*	153.006	0.994	1.323	28.710	0.239	6.848
CIFG16B3MpRC3	*Star Wars 4*	229.454	0.663	1.199	42.700	0.159	6.792
CIFG16B3MpRC1	*Tokyo Olympics*	34.392	4.421	1.282	18.201	1.061	19.314
CIFG16B3MpRC2	*Tokyo Olympics*	77.547	1.961	0.975	12.134	0.471	5.710
CIFG16B3MpRC3	*Tokyo Olympics*	144.452	1.053	0.895	54.371	0.253	13.737
CIFG16B3MpRC1	*NBC 12 News*	26.031	5.842	0.757	7.635	1.402	10.704
CIFG16B3MpRC2	*NBC 12 News*	58.229	2.612	1.084	10.610	0.627	6.650
CIFG16B3MpRC3	*NBC 12 News*	126.417	1.203	1.198	36.663	0.289	10.584

C. H.264 SVC

TABLE XIX: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B1SV10	*Sony Demo*	8.142	18.677	0.841	4.810	4.482	21.559
CIFG16B1SV16	*Sony Demo*	15.790	9.631	1.109	6.933	2.311	16.026
CIFG16B1SV22	*Sony Demo*	31.794	4.783	1.414	9.798	1.148	11.247
CIFG16B1SV24	*Sony Demo*	40.837	3.724	1.516	10.924	0.894	9.762
CIFG16B1SV28	*Sony Demo*	68.112	2.233	1.733	13.436	0.536	7.199
CIFG16B1SV34	*Sony Demo*	155.266	0.979	2.075	17.718	0.235	4.165
CIFG16B1SV38	*Sony Demo*	266.220	0.571	2.269	20.669	0.137	2.833
CIFG16B1SV42	*Sony Demo*	466.038	0.326	2.318	22.860	0.078	1.790
CIFG16B1SV48	*Sony Demo*	986.784	0.154	2.120	23.452	0.037	0.867
CIFG16B1SV10	*Silence of the Lambs*	14.831	10.253	0.990	7.271	2.461	17.892
CIFG16B1SV16	*Silence of the Lambs*	40.131	3.789	1.438	14.348	0.909	13.048
CIFG16B1SV22	*Silence of the Lambs*	92.735	1.640	1.843	23.224	0.394	9.140
CIFG16B1SV24	*Silence of the Lambs*	120.221	1.265	1.942	26.204	0.304	7.955
CIFG16B1SV28	*Silence of the Lambs*	197.490	0.770	2.111	32.201	0.185	5.951
CIFG16B1SV34	*Silence of the Lambs*	409.419	0.371	2.251	38.615	0.089	3.442
CIFG16B1SV38	*Silence of the Lambs*	648.030	0.235	2.240	39.799	0.056	2.241
CIFG16B1SV42	*Silence of the Lambs*	1036.452	0.147	2.092	37.269	0.035	1.312
CIFG16B1SV48	*Silence of the Lambs*	1931.974	0.079	1.731	27.964	0.019	0.528
CIFG16B1SV10	*Star Wars 4*	16.942	8.975	0.923	5.557	2.154	11.971
CIFG16B1SV16	*Star Wars 4*	41.960	3.624	1.238	9.336	0.870	8.120
CIFG16B1SV22	*Star Wars 4*	89.749	1.694	1.479	12.230	0.407	4.973
CIFG16B1SV24	*Star Wars 4*	114.649	1.326	1.535	12.786	0.318	4.070
CIFG16B1SV28	*Star Wars 4*	184.542	0.824	1.629	13.749	0.198	2.719
CIFG16B1SV34	*Star Wars 4*	379.038	0.401	1.737	17.159	0.096	1.652
CIFG16B1SV38	*Star Wars 4*	592.077	0.257	1.777	19.141	0.062	1.180
CIFG16B1SV42	*Star Wars 4*	930.763	0.163	1.736	20.572	0.039	0.807
CIFG16B1SV48	*Star Wars 4*	1697.780	0.090	1.598	24.764	0.021	0.532
CIFG16B1SV10	*Tokyo olympics*	8.821	17.238	0.706	4.444	4.137	18.385
CIFG16B1SV16	*Tokyo olympics*	18.015	8.441	0.900	6.889	2.026	13.956
CIFG16B1SV22	*Tokyo olympics*	42.496	3.578	1.208	11.935	0.859	10.250
CIFG16B1SV24	*Tokyo olympics*	56.377	2.697	1.303	14.060	0.647	9.102
CIFG16B1SV28	*Tokyo olympics*	93.756	1.622	1.446	18.231	0.389	7.097
CIFG16B1SV34	*Tokyo olympics*	195.958	0.776	1.571	24.072	0.186	4.483
CIFG16B1SV38	*Tokyo olympics*	311.093	0.489	1.598	25.834	0.117	3.031
CIFG16B1SV42	*Tokyo olympics*	507.193	0.300	1.543	24.525	0.072	1.765
CIFG16B1SV48	*Tokyo olympics*	1039.303	0.146	1.404	17.873	0.035	0.628
CIFG16B1SV10	*NBC 12 News*	4.708	32.297	0.354	2.433	7.751	18.860
CIFG16B1SV16	*NBC 12 News*	9.407	16.165	0.562	3.520	3.880	13.657
CIFG16B1SV22	*NBC 12 News*	23.489	6.474	0.894	5.990	1.554	9.306
CIFG16B1SV24	*NBC 12 News*	32.731	4.646	1.014	7.211	1.115	8.040
CIFG16B1SV28	*NBC 12 News*	59.896	2.539	1.237	9.668	0.609	5.891
CIFG16B1SV34	*NBC 12 News*	136.196	1.117	1.500	13.537	0.268	3.627
CIFG16B1SV38	*NBC 12 News*	223.295	0.681	1.616	15.965	0.163	2.609
CIFG16B1SV42	*NBC 12 News*	370.328	0.411	1.647	18.041	0.099	1.778
CIFG16B1SV48	*NBC 12 News*	762.564	0.199	1.619	19.904	0.048	0.953

TABLE XX: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B3SV10	*Sony Demo*	8.485	17.921	0.974	5.503	4.301	23.670
CIFG16B3SV16	*Sony Demo*	16.563	9.181	1.323	8.105	2.203	17.859
CIFG16B3SV22	*Sony Demo*	33.480	4.542	1.748	11.773	1.090	12.834
CIFG16B3SV24	*Sony Demo*	42.677	3.563	1.874	13.119	0.855	11.219
CIFG16B3SV28	*Sony Demo*	67.822	2.242	2.119	15.804	0.538	8.504
CIFG16B3SV34	*Sony Demo*	141.603	1.074	2.412	19.801	0.258	5.103
CIFG16B3SV38	*Sony Demo*	242.628	0.627	2.558	22.512	0.150	3.386
CIFG16B3SV42	*Sony Demo*	403.512	0.377	2.630	24.660	0.090	2.230
CIFG16B3SV48	*Sony Demo*	874.056	0.174	2.486	26.009	0.042	1.086
CIFG16B3SV10	*Silence of the Lambs*	15.444	9.846	1.194	8.384	2.363	19.813
CIFG16B3SV16	*Silence of the Lambs*	39.887	3.812	1.649	15.949	0.915	14.593
CIFG16B3SV22	*Silence of the Lambs*	90.772	1.675	2.085	25.779	0.402	10.365

TABLE XX: *continued*

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B3SV24	*Silence of the Lambs*	117.819	1.291	2.197	29.304	0.310	9.077
CIFG16B3SV28	*Silence of the Lambs*	187.668	0.810	2.378	35.844	0.194	6.971
CIFG16B3SV34	*Silence of the Lambs*	374.488	0.406	2.521	43.248	0.097	4.215
CIFG16B3SV38	*Silence of the Lambs*	603.233	0.252	2.504	45.136	0.060	2.731
CIFG16B3SV42	*Silence of the Lambs*	941.786	0.161	2.418	43.998	0.039	1.705
CIFG16B3SV48	*Silence of the Lambs*	1796.696	0.085	2.077	36.131	0.020	0.734
CIFG16B3SV10	*Star Wars 4*	17.447	8.716	1.145	6.441	2.092	13.473
CIFG16B3SV16	*Star Wars 4*	41.240	3.687	1.474	10.605	0.885	9.385
CIFG16B3SV22	*Star Wars 4*	87.043	1.747	1.735	14.283	0.419	5.988
CIFG16B3SV24	*Star Wars 4*	111.617	1.362	1.798	15.118	0.327	4.943
CIFG16B3SV28	*Star Wars 4*	175.426	0.867	1.906	16.105	0.208	3.350
CIFG16B3SV34	*Star Wars 4*	346.582	0.439	1.987	18.929	0.105	1.993
CIFG16B3SV38	*Star Wars 4*	551.899	0.276	1.993	20.840	0.066	1.378
CIFG16B3SV42	*Star Wars 4*	843.868	0.180	1.975	22.131	0.043	0.957
CIFG16B3SV48	*Star Wars 4*	1571.702	0.097	1.828	24.909	0.023	0.578
CIFG16B3SV10	*Tokyo olympics*	9.183	16.560	0.789	5.078	3.974	20.181
CIFG16B3SV16	*Tokyo olympics*	18.891	8.049	1.065	7.970	1.932	15.397
CIFG16B3SV22	*Tokyo olympics*	43.329	3.510	1.429	13.622	0.842	11.473
CIFG16B3SV24	*Tokyo olympics*	57.185	2.659	1.531	15.999	0.638	10.211
CIFG16B3SV28	*Tokyo olympics*	93.136	1.633	1.709	20.691	0.392	8.108
CIFG16B3SV34	*Tokyo olympics*	186.075	0.817	1.850	27.190	0.196	5.333
CIFG16B3SV38	*Tokyo olympics*	297.841	0.511	1.856	29.729	0.123	3.643
CIFG16B3SV42	*Tokyo olympics*	465.324	0.327	1.823	29.481	0.078	2.312
CIFG16B3SV48	*Tokyo olympics*	944.813	0.161	1.678	23.697	0.039	0.915
CIFG16B3SV10	*NBC 12 News*	4.864	31.265	0.424	2.786	7.504	20.908
CIFG16B3SV16	*NBC 12 News*	9.870	15.406	0.692	4.158	3.698	15.375
CIFG16B3SV22	*NBC 12 News*	24.474	6.213	1.119	7.190	1.491	10.722
CIFG16B3SV24	*NBC 12 News*	33.691	4.513	1.244	8.559	1.083	9.271
CIFG16B3SV28	*NBC 12 News*	60.191	2.526	1.499	11.489	0.606	6.966
CIFG16B3SV34	*NBC 12 News*	131.208	1.159	1.773	15.427	0.278	4.291
CIFG16B3SV38	*NBC 12 News*	214.880	0.708	1.859	17.893	0.170	3.039
CIFG16B3SV42	*NBC 12 News*	338.892	0.449	1.900	19.924	0.108	2.146
CIFG16B3SV48	*NBC 12 News*	680.158	0.224	1.852	22.060	0.054	1.184

TABLE XXI: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7SV10	*Sony Demo*	8.977	16.939	1.005	6.046	4.065	24.577
CIFG16B7SV16	*Sony Demo*	17.737	8.574	1.405	9.063	2.058	18.649
CIFG16B7SV22	*Sony Demo*	36.924	4.118	1.945	13.659	0.988	13.500
CIFG16B7SV24	*Sony Demo*	46.622	3.262	2.118	15.310	0.783	11.984
CIFG16B7SV28	*Sony Demo*	74.324	2.046	2.423	18.483	0.491	9.076
CIFG16B7SV34	*Sony Demo*	148.382	1.025	2.739	22.640	0.246	5.568
CIFG16B7SV38	*Sony Demo*	237.854	0.639	2.859	24.919	0.153	3.823
CIFG16B7SV42	*Sony Demo*	395.351	0.385	2.880	26.724	0.092	2.467
CIFG16B7SV48	*Sony Demo*	826.187	0.184	2.760	28.883	0.044	1.276
CIFG16B7SV10	*Silence of the Lambs*	17.312	8.784	1.258	9.790	2.108	20.638
CIFG16B7SV16	*Silence of the Lambs*	43.231	3.517	1.781	18.142	0.844	15.315
CIFG16B7SV22	*Silence of the Lambs*	98.090	1.550	2.271	29.389	0.372	10.935
CIFG16B7SV24	*Silence of the Lambs*	125.051	1.216	2.401	33.272	0.292	9.710
CIFG16B7SV28	*Silence of the Lambs*	197.359	0.770	2.580	40.091	0.185	7.414
CIFG16B7SV34	*Silence of the Lambs*	383.789	0.396	2.720	48.047	0.095	4.569
CIFG16B7SV38	*Silence of the Lambs*	594.255	0.256	2.721	50.647	0.061	3.110
CIFG16B7SV42	*Silence of the Lambs*	933.813	0.163	2.613	49.459	0.039	1.933
CIFG16B7SV48	*Silence of the Lambs*	1754.461	0.087	2.290	40.878	0.021	0.850
CIFG16B7SV10	*Star Wars 4*	19.243	7.902	1.207	7.393	1.897	14.022
CIFG16B7SV16	*Star Wars 4*	44.081	3.450	1.611	12.009	0.828	9.942
CIFG16B7SV22	*Star Wars 4*	93.402	1.628	1.916	16.438	0.391	6.423
CIFG16B7SV24	*Star Wars 4*	117.473	1.294	1.988	17.537	0.311	5.448
CIFG16B7SV28	*Star Wars 4*	184.885	0.822	2.098	18.576	0.197	3.667
CIFG16B7SV34	*Star Wars 4*	358.494	0.424	2.178	21.291	0.102	2.167
CIFG16B7SV38	*Star Wars 4*	550.633	0.276	2.184	23.291	0.066	1.544
CIFG16B7SV42	*Star Wars 4*	847.919	0.179	2.128	24.256	0.043	1.044
CIFG16B7SV48	*Star Wars 4*	1536.253	0.099	1.999	27.318	0.024	0.649
CIFG16B7SV10	*Tokyo olympics*	9.631	15.790	0.792	5.518	3.789	20.911

TABLE XXI: *continued*

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B7SV16	*Tokyo olympics*	20.356	7.470	1.103	8.923	1.793	15.998
CIFG16B7SV22	*Tokyo olympics*	47.554	3.198	1.531	15.624	0.767	11.991
CIFG16B7SV24	*Tokyo olympics*	61.716	2.464	1.654	18.305	0.591	10.824
CIFG16B7SV28	*Tokyo olympics*	100.736	1.510	1.850	23.615	0.362	8.556
CIFG16B7SV34	*Tokyo olympics*	197.184	0.771	2.021	30.898	0.185	5.719
CIFG16B7SV38	*Tokyo olympics*	303.805	0.501	2.053	34.212	0.120	4.110
CIFG16B7SV42	*Tokyo olympics*	475.257	0.320	2.000	34.279	0.077	2.632
CIFG16B7SV48	*Tokyo olympics*	929.295	0.164	1.867	28.032	0.039	1.101
CIFG16B7SV10	*NBC 12 News*	5.048	30.124	0.415	3.012	7.230	21.773
CIFG16B7SV16	*NBC 12 News*	10.525	14.447	0.701	4.646	3.467	16.110
CIFG16B7SV22	*NBC 12 News*	27.052	5.621	1.202	8.407	1.349	11.341
CIFG16B7SV24	*NBC 12 News*	36.758	4.137	1.366	10.051	0.993	9.979
CIFG16B7SV28	*NBC 12 News*	65.492	2.322	1.658	13.386	0.557	7.459
CIFG16B7SV34	*NBC 12 News*	139.560	1.090	1.974	17.596	0.262	4.601
CIFG16B7SV38	*NBC 12 News*	218.668	0.695	2.077	20.089	0.167	3.353
CIFG16B7SV42	*NBC 12 News*	344.046	0.442	2.093	22.041	0.106	2.338
CIFG16B7SV48	*NBC 12 News*	664.779	0.229	2.044	23.974	0.055	1.316

TABLE XXII: Overview of frame size statistics of single–layer traces.

Enc. M.	Video	Compr. ratio YUV:SVC	Frame Size Mean $\bar{X}$ [kbyte]	Frame Size CoV_X $S_X/\bar{X}$	Frame Size Peak/Mean $X_{\max}/\bar{X}$	Bit Rate Mean $\bar{X}/T$ [Mbps]	Bit Rate Peak $X_{\max}/T$ [Mbps]
CIFG16B15SV10	*Sony Demo*	8.877	17.130	1.023	6.519	4.111	26.799
CIFG16B15SV16	*Sony Demo*	17.616	8.632	1.450	9.916	2.072	20.543
CIFG16B15SV22	*Sony Demo*	36.812	4.131	2.087	15.350	0.991	15.218
CIFG16B15SV24	*Sony Demo*	47.175	3.223	2.309	17.416	0.774	13.474
CIFG16B15SV28	*Sony Demo*	74.055	2.053	2.706	21.354	0.493	10.524
CIFG16B15SV34	*Sony Demo*	143.288	1.061	3.103	26.040	0.255	6.632
CIFG16B15SV38	*Sony Demo*	224.722	0.677	3.231	28.176	0.162	4.576
CIFG16B15SV42	*Sony Demo*	358.235	0.424	3.252	29.846	0.102	3.041
CIFG16B15SV48	*Sony Demo*	729.954	0.208	3.098	31.173	0.050	1.559
CIFG16B15SV10	*Silence of the Lambs*	17.010	8.940	1.259	10.540	2.145	22.613
CIFG16B15SV16	*Silence of the Lambs*	43.350	3.508	1.861	20.160	0.842	16.973
CIFG16B15SV22	*Silence of the Lambs*	97.041	1.567	2.439	32.841	0.376	12.351
CIFG16B15SV24	*Silence of the Lambs*	125.064	1.216	2.598	37.374	0.292	10.906
CIFG16B15SV28	*Silence of the Lambs*	194.699	0.781	2.829	45.579	0.187	8.544
CIFG16B15SV34	*Silence of the Lambs*	369.869	0.411	3.017	55.639	0.099	5.490
CIFG16B15SV38	*Silence of the Lambs*	567.965	0.268	3.018	58.502	0.064	3.759
CIFG16B15SV42	*Silence of the Lambs*	871.274	0.175	2.929	58.425	0.042	2.447
CIFG16B15SV48	*Silence of the Lambs*	1625.379	0.094	2.619	50.387	0.022	1.131
CIFG16B15SV10	*Star Wars 4*	19.105	7.959	1.221	8.151	1.910	15.570
CIFG16B15SV16	*Star Wars 4*	44.379	3.427	1.709	13.622	0.822	11.202
CIFG16B15SV22	*Star Wars 4*	92.397	1.646	2.102	19.178	0.395	7.575
CIFG16B15SV24	*Star Wars 4*	117.674	1.292	2.200	20.655	0.310	6.406
CIFG16B15SV28	*Star Wars 4*	182.422	0.834	2.344	22.648	0.200	4.531
CIFG16B15SV34	*Star Wars 4*	349.912	0.435	2.440	24.136	0.104	2.517
CIFG16B15SV38	*Star Wars 4*	535.976	0.284	2.434	26.675	0.068	1.816
CIFG16B15SV42	*Star Wars 4*	808.996	0.188	2.376	27.856	0.045	1.257
CIFG16B15SV48	*Star Wars 4*	1452.695	0.105	2.217	28.239	0.025	0.709
CIFG16B15SV10	*Tokyo olympics*	9.420	16.142	0.787	5.883	3.874	22.790
CIFG16B15SV16	*Tokyo olympics*	19.985	7.609	1.095	9.609	1.826	17.548
CIFG16B15SV22	*Tokyo olympics*	47.156	3.225	1.583	17.201	0.774	13.313
CIFG16B15SV24	*Tokyo olympics*	62.066	2.450	1.726	20.368	0.588	11.977
CIFG16B15SV28	*Tokyo olympics*	100.870	1.508	1.964	26.765	0.362	9.684
CIFG16B15SV34	*Tokyo olympics*	196.767	0.773	2.193	35.775	0.185	6.635
CIFG16B15SV38	*Tokyo olympics*	302.571	0.503	2.251	40.249	0.121	4.855
CIFG16B15SV42	*Tokyo olympics*	464.271	0.328	2.230	41.816	0.079	3.287
CIFG16B15SV48	*Tokyo olympics*	887.784	0.171	2.105	36.541	0.041	1.502
CIFG16B15SV10	*NBC 12 News*	4.971	30.589	0.418	3.253	7.341	23.878
CIFG16B15SV16	*NBC 12 News*	10.370	14.664	0.703	5.074	3.519	17.856
CIFG16B15SV22	*NBC 12 News*	26.996	5.633	1.251	9.528	1.352	12.881
CIFG16B15SV24	*NBC 12 News*	37.381	4.068	1.456	11.588	0.976	11.313
CIFG16B15SV28	*NBC 12 News*	66.228	2.296	1.819	15.746	0.551	8.677
CIFG16B15SV34	*NBC 12 News*	139.496	1.090	2.207	20.707	0.262	5.418
CIFG16B15SV38	*NBC 12 News*	217.919	0.698	2.337	23.469	0.167	3.930
CIFG16B15SV42	*NBC 12 News*	334.204	0.455	2.376	25.525	0.109	2.787

TABLE XXII: *continued*

		Compr.	Frame Size			Bit Rate	
		ratio	Mean	CoV_X	Peak/Mean	Mean	Peak
Enc. M.	Video	YUV:SVC	$\bar{X}$ [kbyte]	$S_X/\bar{X}$	$X_{\max}/\bar{X}$	$\bar{X}/T$ [Mbps]	$X_{\max}/T$ [Mbps]
CIFG16B15SV48	*NBC 12 News*	628.439	0.242	2.313	27.536	0.058	1.599

APPENDIX II
GOP SIZE STATISTICS

A. H.264/AVC

TABLE XXIII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B1F10	*Sony Demo*	266.185	0.477	2.417	3.993	9.650
CIFG16B1F16	*Sony Demo*	132.154	0.522	2.739	1.982	5.430
CIFG16B1F22	*Sony Demo*	62.301	0.532	2.796	0.935	2.612
CIFG16B1F24	*Sony Demo*	47.389	0.532	2.783	0.711	1.979
CIFG16B1F28	*Sony Demo*	28.156	0.528	2.950	0.422	1.246
CIFG16B1F34	*Sony Demo*	12.587	0.510	2.982	0.189	0.563
CIFG16B1F38	*Sony Demo*	7.195	0.501	2.919	0.108	0.315
CIFG16B1F42	*Sony Demo*	4.209	0.492	2.788	0.063	0.176
CIFG16B1F48	*Sony Demo*	1.909	0.461	2.563	0.029	0.073
CIFG16B1F10	*Silence of the Lambs*	126.181	0.640	4.939	1.893	9.348
CIFG16B1F16	*Silence of the Lambs*	49.566	0.922	8.132	0.743	6.046
CIFG16B1F22	*Silence of the Lambs*	21.779	1.063	11.290	0.327	3.688
CIFG16B1F24	*Silence of the Lambs*	16.665	1.084	12.189	0.250	3.047
CIFG16B1F28	*Silence of the Lambs*	10.133	1.101	13.536	0.152	2.057
CIFG16B1F34	*Silence of the Lambs*	4.899	1.046	14.444	0.073	1.062
CIFG16B1F38	*Silence of the Lambs*	3.047	0.960	14.082	0.046	0.644
CIFG16B1F42	*Silence of the Lambs*	1.944	0.845	12.560	0.029	0.366
CIFG16B1F48	*Silence of the Lambs*	1.027	0.640	8.911	0.015	0.137
CIFG16B1F10	*Star Wars 4*	116.690	0.501	3.863	1.750	6.762
CIFG16B1F16	*Star Wars 4*	49.656	0.634	5.671	0.745	4.224
CIFG16B1F22	*Star Wars 4*	22.939	0.688	7.107	0.344	2.446
CIFG16B1F24	*Star Wars 4*	17.686	0.696	7.536	0.265	1.999
CIFG16B1F28	*Star Wars 4*	10.852	0.706	8.342	0.163	1.358
CIFG16B1F34	*Star Wars 4*	5.268	0.696	9.398	0.079	0.743
CIFG16B1F38	*Star Wars 4*	3.280	0.672	9.684	0.049	0.476
CIFG16B1F42	*Star Wars 4*	2.106	0.636	9.817	0.032	0.310
CIFG16B1F48	*Star Wars 4*	1.145	0.546	7.864	0.017	0.135
CIFG16B1F10	*Tokyo Olympics*	244.161	0.342	2.515	3.662	9.212
CIFG16B1F16	*Tokyo Olympics*	112.075	0.512	3.601	1.681	6.054
CIFG16B1F22	*Tokyo Olympics*	46.364	0.703	5.227	0.695	3.635
CIFG16B1F24	*Tokyo Olympics*	35.078	0.733	5.678	0.526	2.987
CIFG16B1F28	*Tokyo Olympics*	21.230	0.764	6.296	0.318	2.005
CIFG16B1F34	*Tokyo Olympics*	10.167	0.756	6.863	0.153	1.047
CIFG16B1F38	*Tokyo Olympics*	6.220	0.721	6.981	0.093	0.651
CIFG16B1F42	*Tokyo Olympics*	3.831	0.671	6.622	0.057	0.381
CIFG16B1F48	*Tokyo Olympics*	1.807	0.577	4.978	0.027	0.135
CIFG16B1F10	*NBC 12 News*	465.726	0.196	1.692	6.986	11.818
CIFG16B1F16	*NBC 12 News*	213.879	0.337	2.355	3.208	7.556
CIFG16B1F22	*NBC 12 News*	79.193	0.523	3.561	1.188	4.230
CIFG16B1F24	*NBC 12 News*	56.569	0.565	3.894	0.849	3.304
CIFG16B1F28	*NBC 12 News*	31.630	0.589	3.966	0.474	1.882
CIFG16B1F34	*NBC 12 News*	14.224	0.569	4.536	0.213	0.968
CIFG16B1F38	*NBC 12 News*	8.464	0.538	4.764	0.127	0.605
CIFG16B1F42	*NBC 12 News*	5.141	0.497	4.832	0.077	0.373
CIFG16B1F48	*NBC 12 News*	2.394	0.453	4.456	0.036	0.160

TABLE XXIV: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3F10	*Sony Demo*	260.384	0.494	2.426	3.906	9.474
CIFG16B3F16	*Sony Demo*	126.826	0.546	2.752	1.902	5.235
CIFG16B3F22	*Sony Demo*	57.327	0.546	2.814	0.860	2.419
CIFG16B3F24	*Sony Demo*	43.270	0.538	2.908	0.649	1.887
CIFG16B3F28	*Sony Demo*	25.619	0.522	3.053	0.384	1.173
CIFG16B3F34	*Sony Demo*	11.662	0.502	3.020	0.175	0.528
CIFG16B3F38	*Sony Demo*	6.772	0.498	2.863	0.102	0.291
CIFG16B3F42	*Sony Demo*	3.979	0.495	2.748	0.060	0.164
CIFG16B3F48	*Sony Demo*	1.775	0.446	2.575	0.027	0.069

TABLE XXIV: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3F10	*Silence of the Lambs*	118.902	0.720	5.830	1.784	10.398
CIFG16B3F16	*Silence of the Lambs*	47.159	0.982	9.329	0.707	6.599
CIFG16B3F22	*Silence of the Lambs*	20.742	1.108	12.798	0.311	3.982
CIFG16B3F24	*Silence of the Lambs*	15.869	1.127	13.809	0.238	3.287
CIFG16B3F28	*Silence of the Lambs*	9.622	1.130	15.060	0.144	2.174
CIFG16B3F34	*Silence of the Lambs*	4.593	1.053	15.459	0.069	1.065
CIFG16B3F38	*Silence of the Lambs*	2.847	0.953	14.833	0.043	0.634
CIFG16B3F42	*Silence of the Lambs*	1.797	0.818	12.301	0.027	0.332
CIFG16B3F48	*Silence of the Lambs*	0.952	0.573	7.997	0.014	0.114
CIFG16B3F10	*Star Wars 4*	108.556	0.542	3.904	1.628	6.357
CIFG16B3F16	*Star Wars 4*	47.633	0.653	5.509	0.715	3.936
CIFG16B3F22	*Star Wars 4*	22.115	0.702	6.922	0.332	2.296
CIFG16B3F24	*Star Wars 4*	17.022	0.708	7.370	0.255	1.882
CIFG16B3F28	*Star Wars 4*	10.379	0.713	8.216	0.156	1.279
CIFG16B3F34	*Star Wars 4*	4.989	0.692	9.188	0.075	0.688
CIFG16B3F38	*Star Wars 4*	3.114	0.668	9.522	0.047	0.445
CIFG16B3F42	*Star Wars 4*	1.993	0.627	9.397	0.030	0.281
CIFG16B3F48	*Star Wars 4*	1.082	0.506	6.961	0.016	0.113
CIFG16B3F10	*Tokyo Olympics*	247.555	0.370	2.606	3.713	9.678
CIFG16B3F16	*Tokyo Olympics*	108.379	0.567	3.798	1.626	6.175
CIFG16B3F22	*Tokyo Olympics*	44.852	0.741	5.435	0.673	3.656
CIFG16B3F24	*Tokyo Olympics*	33.946	0.765	5.889	0.509	2.999
CIFG16B3F28	*Tokyo Olympics*	20.392	0.777	6.468	0.306	1.979
CIFG16B3F34	*Tokyo Olympics*	9.618	0.752	7.019	0.144	1.013
CIFG16B3F38	*Tokyo Olympics*	5.843	0.711	7.085	0.088	0.621
CIFG16B3F42	*Tokyo Olympics*	3.539	0.659	6.463	0.053	0.343
CIFG16B3F48	*Tokyo Olympics*	1.617	0.555	4.292	0.024	0.104
CIFG16B3F10	*NBC 12 News*	441.347	0.209	1.742	6.620	11.533
CIFG16B3F16	*NBC 12 News*	197.613	0.364	2.469	2.964	7.318
CIFG16B3F22	*NBC 12 News*	72.482	0.558	3.720	1.087	4.045
CIFG16B3F24	*NBC 12 News*	52.320	0.594	4.065	0.785	3.190
CIFG16B3F28	*NBC 12 News*	29.262	0.605	4.211	0.439	1.848
CIFG16B3F34	*NBC 12 News*	13.161	0.566	4.782	0.197	0.944
CIFG16B3F38	*NBC 12 News*	7.897	0.528	5.043	0.118	0.597
CIFG16B3F42	*NBC 12 News*	4.781	0.477	4.977	0.072	0.357
CIFG16B3F48	*NBC 12 News*	2.168	0.425	4.255	0.033	0.138

TABLE XXV: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7F10	*Sony Demo*	272.773	0.503	2.408	4.092	9.854
CIFG16B7F16	*Sony Demo*	133.727	0.565	2.743	2.006	5.502
CIFG16B7F22	*Sony Demo*	60.408	0.576	2.880	0.906	2.610
CIFG16B7F24	*Sony Demo*	45.333	0.566	2.951	0.680	2.007
CIFG16B7F28	*Sony Demo*	26.271	0.537	3.090	0.394	1.218
CIFG16B7F34	*Sony Demo*	11.880	0.510	3.116	0.178	0.555
CIFG16B7F38	*Sony Demo*	6.986	0.499	3.005	0.105	0.315
CIFG16B7F42	*Sony Demo*	4.097	0.499	2.832	0.061	0.174
CIFG16B7F48	*Sony Demo*	1.797	0.472	2.788	0.027	0.075
CIFG16B7F10	*Silence of the Lambs*	123.317	0.760	6.052	1.850	11.195
CIFG16B7F16	*Silence of the Lambs*	49.646	1.015	9.584	0.745	7.137
CIFG16B7F22	*Silence of the Lambs*	22.033	1.142	13.099	0.331	4.329
CIFG16B7F24	*Silence of the Lambs*	16.821	1.166	14.193	0.252	3.581
CIFG16B7F28	*Silence of the Lambs*	10.149	1.168	15.557	0.152	2.368
CIFG16B7F34	*Silence of the Lambs*	4.755	1.086	15.938	0.071	1.137
CIFG16B7F38	*Silence of the Lambs*	2.916	0.981	15.191	0.044	0.664
CIFG16B7F42	*Silence of the Lambs*	1.806	0.844	12.879	0.027	0.349
CIFG16B7F48	*Silence of the Lambs*	0.919	0.577	8.042	0.014	0.111
CIFG16B7F10	*Star Wars 4*	111.043	0.568	4.165	1.666	6.937
CIFG16B7F16	*Star Wars 4*	49.699	0.667	5.596	0.745	4.172
CIFG16B7F22	*Star Wars 4*	23.363	0.720	6.972	0.350	2.443
CIFG16B7F24	*Star Wars 4*	17.985	0.730	7.449	0.270	2.010
CIFG16B7F28	*Star Wars 4*	10.906	0.739	8.419	0.164	1.377
CIFG16B7F34	*Star Wars 4*	5.175	0.719	9.646	0.078	0.749
CIFG16B7F38	*Star Wars 4*	3.228	0.694	10.292	0.048	0.498

TABLE XXV: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7F42	*Star Wars 4*	2.048	0.653	10.351	0.031	0.318
CIFG16B7F48	*Star Wars 4*	1.083	0.523	7.129	0.016	0.116
CIFG16B7F10	*Tokyo Olympics*	260.073	0.388	2.742	3.901	10.696
CIFG16B7F16	*Tokyo Olympics*	114.334	0.594	3.971	1.715	6.810
CIFG16B7F22	*Tokyo Olympics*	48.399	0.772	5.582	0.726	4.053
CIFG16B7F24	*Tokyo Olympics*	36.762	0.801	5.991	0.551	3.304
CIFG16B7F28	*Tokyo Olympics*	22.016	0.808	6.354	0.330	2.098
CIFG16B7F34	*Tokyo Olympics*	10.231	0.774	6.812	0.153	1.045
CIFG16B7F38	*Tokyo Olympics*	6.158	0.724	6.875	0.092	0.635
CIFG16B7F42	*Tokyo Olympics*	3.643	0.666	6.151	0.055	0.336
CIFG16B7F48	*Tokyo Olympics*	1.575	0.582	4.516	0.024	0.107
CIFG16B7F10	*NBC 12 News*	439.031	0.217	1.843	6.585	12.139
CIFG16B7F16	*NBC 12 News*	198.361	0.370	2.458	2.975	7.313
CIFG16B7F22	*NBC 12 News*	74.071	0.572	3.717	1.111	4.130
CIFG16B7F24	*NBC 12 News*	53.868	0.609	4.039	0.808	3.264
CIFG16B7F28	*NBC 12 News*	30.159	0.625	4.351	0.452	1.968
CIFG16B7F34	*NBC 12 News*	13.436	0.588	5.053	0.202	1.018
CIFG16B7F38	*NBC 12 News*	8.085	0.550	5.410	0.121	0.656
CIFG16B7F42	*NBC 12 News*	4.848	0.496	5.504	0.073	0.400
CIFG16B7F48	*NBC 12 News*	2.107	0.440	4.279	0.032	0.135

TABLE XXVI: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B15F10	*Sony Demo*	297.906	0.505	2.355	4.469	10.522
CIFG16B15F16	*Sony Demo*	148.757	0.576	2.695	2.231	6.013
CIFG16B15F22	*Sony Demo*	68.751	0.615	2.997	1.031	3.091
CIFG16B15F24	*Sony Demo*	51.923	0.614	3.167	0.779	2.466
CIFG16B15F28	*Sony Demo*	29.723	0.585	3.370	0.446	1.503
CIFG16B15F34	*Sony Demo*	12.909	0.547	3.574	0.194	0.692
CIFG16B15F38	*Sony Demo*	7.529	0.534	3.607	0.113	0.407
CIFG16B15F42	*Sony Demo*	4.386	0.521	3.379	0.066	0.222
CIFG16B15F48	*Sony Demo*	1.866	0.520	3.076	0.028	0.086
CIFG16B15F10	*Silence of the Lambs*	134.243	0.762	5.950	2.014	11.981
CIFG16B15F16	*Silence of the Lambs*	55.072	1.014	8.943	0.826	7.388
CIFG16B15F22	*Silence of the Lambs*	24.864	1.143	11.942	0.373	4.454
CIFG16B15F24	*Silence of the Lambs*	19.023	1.170	12.995	0.285	3.708
CIFG16B15F28	*Silence of the Lambs*	11.415	1.179	14.487	0.171	2.481
CIFG16B15F34	*Silence of the Lambs*	5.245	1.120	15.564	0.079	1.225
CIFG16B15F38	*Silence of the Lambs*	3.160	1.026	15.172	0.047	0.719
CIFG16B15F42	*Silence of the Lambs*	1.893	0.896	13.215	0.028	0.375
CIFG16B15F48	*Silence of the Lambs*	0.896	0.627	8.561	0.013	0.115
CIFG16B15F10	*Star Wars 4*	121.891	0.566	4.012	1.828	7.336
CIFG16B15F16	*Star Wars 4*	55.370	0.657	4.987	0.831	4.142
CIFG16B15F22	*Star Wars 4*	26.507	0.717	6.102	0.398	2.426
CIFG16B15F24	*Star Wars 4*	20.475	0.734	6.603	0.307	2.028
CIFG16B15F28	*Star Wars 4*	12.307	0.766	7.615	0.185	1.406
CIFG16B15F34	*Star Wars 4*	5.750	0.768	8.903	0.086	0.768
CIFG16B15F38	*Star Wars 4*	3.546	0.749	9.891	0.053	0.526
CIFG16B15F42	*Star Wars 4*	2.210	0.709	10.526	0.033	0.349
CIFG16B15F48	*Star Wars 4*	1.113	0.580	6.765	0.017	0.113
CIFG16B15F10	*Tokyo Olympics*	275.878	0.402	2.930	4.138	12.124
CIFG16B15F16	*Tokyo Olympics*	124.140	0.609	4.355	1.862	8.109
CIFG16B15F22	*Tokyo Olympics*	54.617	0.789	6.228	0.819	5.102
CIFG16B15F24	*Tokyo Olympics*	41.881	0.823	6.672	0.628	4.191
CIFG16B15F28	*Tokyo Olympics*	25.333	0.840	7.265	0.380	2.761
CIFG16B15F34	*Tokyo Olympics*	11.726	0.818	7.430	0.176	1.307
CIFG16B15F38	*Tokyo Olympics*	6.966	0.771	7.796	0.104	0.815
CIFG16B15F42	*Tokyo Olympics*	3.983	0.705	5.983	0.060	0.357
CIFG16B15F48	*Tokyo Olympics*	1.598	0.638	5.895	0.024	0.141
CIFG16B15F10	*NBC 12 News*	445.855	0.223	1.799	6.688	12.030
CIFG16B15F16	*NBC 12 News*	205.790	0.368	2.410	3.087	7.438
CIFG16B15F22	*NBC 12 News*	79.701	0.571	3.622	1.196	4.330
CIFG16B15F24	*NBC 12 News*	58.640	0.609	3.957	0.880	3.481
CIFG16B15F28	*NBC 12 News*	33.247	0.632	4.227	0.499	2.108

TABLE XXVI: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B15F34	*NBC 12 News*	14.704	0.611	4.586	0.221	1.012
CIFG16B15F38	*NBC 12 News*	8.742	0.580	5.054	0.131	0.663
CIFG16B15F42	*NBC 12 News*	5.095	0.536	5.485	0.076	0.419
CIFG16B15F48	*NBC 12 News*	2.118	0.482	4.288	0.032	0.136

TABLE XXVII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG12B2F10	*Sony Demo*	201.202	0.481	2.410	4.024	9.700
CIFG12B2F16	*Sony Demo*	102.714	0.511	2.677	2.054	5.499
CIFG12B2F22	*Sony Demo*	49.061	0.512	2.777	0.981	2.725
CIFG12B2F24	*Sony Demo*	37.595	0.508	2.795	0.752	2.101
CIFG12B2F28	*Sony Demo*	22.746	0.503	2.882	0.455	1.311
CIFG12B2F34	*Sony Demo*	10.507	0.497	2.931	0.210	0.616
CIFG12B2F38	*Sony Demo*	6.109	0.500	2.928	0.122	0.358
CIFG12B2F42	*Sony Demo*	3.601	0.501	2.896	0.072	0.209
CIFG12B2F48	*Sony Demo*	1.601	0.463	2.610	0.032	0.084
CIFG12B2F10	*Silence of the Lambs*	91.349	0.688	5.715	1.827	10.441
CIFG12B2F16	*Silence of the Lambs*	38.428	0.907	8.802	0.769	6.765
CIFG12B2F22	*Silence of the Lambs*	17.327	1.023	11.830	0.347	4.100
CIFG12B2F24	*Silence of the Lambs*	13.347	1.038	12.652	0.267	3.377
CIFG12B2F28	*Silence of the Lambs*	8.184	1.045	13.726	0.164	2.247
CIFG12B2F34	*Silence of the Lambs*	3.985	0.990	14.035	0.080	1.119
CIFG12B2F38	*Silence of the Lambs*	2.472	0.917	13.437	0.049	0.664
CIFG12B2F42	*Silence of the Lambs*	1.566	0.808	11.577	0.031	0.363
CIFG12B2F48	*Silence of the Lambs*	0.811	0.598	7.832	0.016	0.127
720pG12B2FxT10	*Sony Demo*	1139.795	0.410	1.967	22.796	44.842
720pG12B2FxT22	*Sony Demo*	290.247	0.563	2.609	5.805	15.144
720pG12B2FxT28	*Sony Demo*	122.808	0.547	2.968	2.456	7.290
720pG12B2FxT34	*Sony Demo*	55.565	0.523	3.167	1.111	3.519
720pG12B2FxT38	*Sony Demo*	33.776	0.490	2.861	0.676	1.933
720pG12B2FxT42	*Sony Demo*	21.851	0.488	3.105	0.437	1.357
720pG12B2FxT48	*Sony Demo*	11.429	0.490	3.163	0.229	0.723
720pG12B2FxT10	*Terminator 2*	1430.641	0.307	2.185	28.613	62.522
720pG12B2FxT22	*Terminator 2*	254.287	0.512	3.568	5.086	18.147
720pG12B2FxT28	*Terminator 2*	110.735	0.544	3.810	2.215	8.438
720pG12B2FxT34	*Terminator 2*	54.469	0.534	3.413	1.089	3.718
720pG12B2FxT38	*Terminator 2*	35.073	0.524	3.134	0.701	2.198
720pG12B2FxT42	*Terminator 2*	23.463	0.527	3.450	0.469	1.619
720pG12B2FxT48	*Terminator 2*	12.625	0.537	3.857	0.253	0.974

TABLE XXVIII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3FRC1	*Sony Demo*	55.345	0.732	13.703	0.830	11.376
CIFG16B3FRC2	*Sony Demo*	25.228	1.316	24.333	0.378	9.208
CIFG16B3FRC3	*Sony Demo*	6.747	2.412	50.069	0.101	5.067
CIFG16B3FRC1	*Silence of the Lambs*	20.745	0.441	9.558	0.311	2.974
CIFG16B3FRC2	*Silence of the Lambs*	9.625	0.426	6.973	0.144	1.007
CIFG16B3FRC3	*Silence of the Lambs*	2.848	0.465	8.424	0.043	0.360
CIFG16B3FRC1	*Star Wars 4*	22.085	0.647	19.334	0.331	6.405
CIFG16B3FRC2	*Star Wars 4*	10.405	0.736	19.371	0.156	3.023
CIFG16B3FRC3	*Star Wars 4*	3.131	0.524	7.479	0.047	0.351
CIFG16B3FRC1	*Tokyo Olympics*	44.880	0.404	8.330	0.673	5.607
CIFG16B3FRC2	*Tokyo Olympics*	20.409	0.480	8.215	0.306	2.515
CIFG16B3FRC3	*Tokyo Olympics*	5.851	0.599	17.845	0.088	1.566
CIFG16B3FRC1	*NBC 12 News*	72.395	0.248	3.895	1.086	4.230
CIFG16B3FRC2	*NBC 12 News*	29.286	0.393	6.166	0.439	2.708
CIFG16B3FRC3	*NBC 12 News*	7.906	0.410	5.932	0.119	0.703

B. MPEG–4 Part 2

TABLE XXIX: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B1Mp01	*Sony Demo*	451.216	0.415	2.355	6.768	15.942
CIFG16B1Mp02	*Sony Demo*	171.873	0.542	3.033	2.578	7.820
CIFG16B1Mp04	*Sony Demo*	77.618	0.560	3.112	1.164	3.623
CIFG16B1Mp08	*Sony Demo*	33.891	0.550	2.905	0.508	1.477
CIFG16B1Mp12	*Sony Demo*	21.303	0.526	2.596	0.320	0.830
CIFG16B1Mp16	*Sony Demo*	15.952	0.506	2.721	0.239	0.651
CIFG16B1Mp20	*Sony Demo*	13.328	0.490	2.820	0.200	0.564
CIFG16B1Mp24	*Sony Demo*	11.886	0.485	2.861	0.178	0.510
CIFG16B1Mp28	*Sony Demo*	11.073	0.481	2.830	0.166	0.470
CIFG16B1Mp01	*Silence of the Lambs*	248.509	0.446	4.102	3.728	15.292
CIFG16B1Mp02	*Silence of the Lambs*	60.829	0.917	8.745	0.912	7.979
CIFG16B1Mp04	*Silence of the Lambs*	27.392	0.996	10.581	0.411	4.348
CIFG16B1Mp08	*Silence of the Lambs*	14.450	0.910	10.345	0.217	2.242
CIFG16B1Mp12	*Silence of the Lambs*	11.219	0.801	8.947	0.168	1.506
CIFG16B1Mp16	*Silence of the Lambs*	9.964	0.726	7.584	0.149	1.134
CIFG16B1Mp20	*Silence of the Lambs*	9.462	0.667	6.495	0.142	0.922
CIFG16B1Mp24	*Silence of the Lambs*	9.178	0.635	5.717	0.138	0.787
CIFG16B1Mp28	*Silence of the Lambs*	9.031	0.607	5.126	0.135	0.694
CIFG16B1Mp01	*Star Wars 4*	236.401	0.312	2.979	3.546	10.563
CIFG16B1Mp02	*Star Wars 4*	61.635	0.623	5.728	0.925	5.296
CIFG16B1Mp04	*Star Wars 4*	27.695	0.691	6.961	0.415	2.892
CIFG16B1Mp08	*Star Wars 4*	13.803	0.686	7.432	0.207	1.539
CIFG16B1Mp12	*Star Wars 4*	10.106	0.653	7.025	0.152	1.065
CIFG16B1Mp16	*Star Wars 4*	8.603	0.624	6.394	0.129	0.825
CIFG16B1Mp20	*Star Wars 4*	7.965	0.591	5.779	0.119	0.690
CIFG16B1Mp24	*Star Wars 4*	7.560	0.573	5.310	0.113	0.602
CIFG16B1Mp28	*Star Wars 4*	7.374	0.554	4.888	0.111	0.541
CIFG16B1Mp01	*Tokyo Olympics*	382.539	0.340	2.853	5.738	16.372
CIFG16B1Mp02	*Tokyo Olympics*	124.117	0.624	4.809	1.862	8.953
CIFG16B1Mp04	*Tokyo Olympics*	55.948	0.708	5.872	0.839	4.928
CIFG16B1Mp08	*Tokyo Olympics*	27.616	0.667	6.140	0.414	2.543
CIFG16B1Mp12	*Tokyo Olympics*	19.539	0.600	5.764	0.293	1.689
CIFG16B1Mp16	*Tokyo Olympics*	16.048	0.546	5.239	0.241	1.261
CIFG16B1Mp20	*Tokyo Olympics*	14.292	0.505	4.737	0.214	1.015
CIFG16B1Mp24	*Tokyo Olympics*	13.226	0.480	4.319	0.198	0.857
CIFG16B1Mp28	*Tokyo Olympics*	12.592	0.461	3.951	0.189	0.746
CIFG16B1Mp01	*NBC 12 News*	685.346	0.181	1.722	10.280	17.702
CIFG16B1Mp02	*NBC 12 News*	221.421	0.368	2.553	3.321	8.478
CIFG16B1Mp04	*NBC 12 News*	89.216	0.479	3.284	1.338	4.395
CIFG16B1Mp08	*NBC 12 News*	39.221	0.539	3.877	0.588	2.281
CIFG16B1Mp12	*NBC 12 News*	25.899	0.550	4.025	0.388	1.564
CIFG16B1Mp16	*NBC 12 News*	20.196	0.547	3.965	0.303	1.201
CIFG16B1Mp20	*NBC 12 News*	17.253	0.538	3.824	0.259	0.990
CIFG16B1Mp24	*NBC 12 News*	15.533	0.529	3.656	0.233	0.852
CIFG16B1Mp28	*NBC 12 News*	14.474	0.517	3.490	0.217	0.758

TABLE XXX: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3Mp01	*Sony Demo*	471.479	0.421	2.328	7.072	16.462
CIFG16B3Mp02	*Sony Demo*	180.064	0.539	2.951	2.701	7.969
CIFG16B3Mp04	*Sony Demo*	80.466	0.557	3.024	1.207	3.650
CIFG16B3Mp08	*Sony Demo*	35.530	0.540	2.777	0.533	1.480
CIFG16B3Mp12	*Sony Demo*	23.010	0.511	2.709	0.345	0.935
CIFG16B3Mp16	*Sony Demo*	17.756	0.488	2.610	0.266	0.695
CIFG16B3Mp20	*Sony Demo*	15.276	0.468	2.596	0.229	0.595
CIFG16B3Mp24	*Sony Demo*	13.935	0.460	2.573	0.209	0.538
CIFG16B3Mp28	*Sony Demo*	13.228	0.449	2.489	0.198	0.494
CIFG16B3Mp01	*Silence of the Lambs*	250.003	0.512	4.664	3.750	17.490
CIFG16B3Mp02	*Silence of the Lambs*	66.977	0.931	9.241	1.005	9.284
CIFG16B3Mp04	*Silence of the Lambs*	30.806	0.986	10.970	0.462	5.069

TABLE XXX: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3Mp08	*Silence of the Lambs*	17.396	0.831	10.021	0.261	2.615
CIFG16B3Mp12	*Silence of the Lambs*	14.211	0.687	8.160	0.213	1.739
CIFG16B3Mp16	*Silence of the Lambs*	12.945	0.603	6.714	0.194	1.304
CIFG16B3Mp20	*Silence of the Lambs*	12.530	0.538	5.612	0.188	1.055
CIFG16B3Mp24	*Silence of the Lambs*	12.250	0.509	4.833	0.184	0.888
CIFG16B3Mp28	*Silence of the Lambs*	12.162	0.479	4.260	0.182	0.777
CIFG16B3Mp01	*Star Wars 4*	236.661	0.350	2.917	3.550	10.353
CIFG16B3Mp02	*Star Wars 4*	66.510	0.621	5.154	0.998	5.142
CIFG16B3Mp04	*Star Wars 4*	30.330	0.678	6.141	0.455	2.794
CIFG16B3Mp08	*Star Wars 4*	15.892	0.637	6.206	0.238	1.479
CIFG16B3Mp12	*Star Wars 4*	12.159	0.578	5.625	0.182	1.026
CIFG16B3Mp16	*Star Wars 4*	10.614	0.537	5.269	0.159	0.839
CIFG16B3Mp20	*Star Wars 4*	10.052	0.493	4.772	0.151	0.720
CIFG16B3Mp24	*Star Wars 4*	9.660	0.475	4.401	0.145	0.638
CIFG16B3Mp28	*Star Wars 4*	9.466	0.455	4.036	0.142	0.573
CIFG16B3Mp01	*Tokyo Olympics*	409.871	0.367	2.836	6.148	17.438
CIFG16B3Mp02	*Tokyo Olympics*	138.218	0.636	4.574	2.073	9.483
CIFG16B3Mp04	*Tokyo Olympics*	62.764	0.711	5.466	0.941	5.146
CIFG16B3Mp08	*Tokyo Olympics*	31.369	0.646	5.579	0.471	2.625
CIFG16B3Mp12	*Tokyo Olympics*	22.494	0.558	5.132	0.337	1.732
CIFG16B3Mp16	*Tokyo Olympics*	18.593	0.492	4.630	0.279	1.291
CIFG16B3Mp20	*Tokyo Olympics*	16.738	0.439	4.122	0.251	1.035
CIFG16B3Mp24	*Tokyo Olympics*	15.483	0.410	3.736	0.232	0.868
CIFG16B3Mp28	*Tokyo Olympics*	14.798	0.386	3.409	0.222	0.757
CIFG16B3Mp01	*NBC 12 News*	682.092	0.195	1.766	10.231	18.072
CIFG16B3Mp02	*NBC 12 News*	227.823	0.372	2.561	3.417	8.751
CIFG16B3Mp04	*NBC 12 News*	93.469	0.476	3.293	1.402	4.617
CIFG16B3Mp08	*NBC 12 News*	41.779	0.525	3.820	0.627	2.394
CIFG16B3Mp12	*NBC 12 News*	28.003	0.523	3.882	0.420	1.631
CIFG16B3Mp16	*NBC 12 News*	22.154	0.507	3.735	0.332	1.241
CIFG16B3Mp20	*NBC 12 News*	19.197	0.485	3.534	0.288	1.018
CIFG16B3Mp24	*NBC 12 News*	17.488	0.466	3.310	0.262	0.868
CIFG16B3Mp28	*NBC 12 News*	16.462	0.446	3.117	0.247	0.770

TABLE XXXI: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7Mp01	*Sony Demo*	506.915	0.420	2.295	7.604	17.453
CIFG16B7Mp02	*Sony Demo*	197.632	0.533	2.881	2.964	8.540
CIFG16B7Mp04	*Sony Demo*	88.668	0.550	2.963	1.330	3.941
CIFG16B7Mp08	*Sony Demo*	40.041	0.521	2.656	0.601	1.595
CIFG16B7Mp12	*Sony Demo*	26.927	0.478	2.551	0.404	1.030
CIFG16B7Mp16	*Sony Demo*	21.554	0.445	2.398	0.323	0.775
CIFG16B7Mp20	*Sony Demo*	19.194	0.415	2.219	0.288	0.639
CIFG16B7Mp24	*Sony Demo*	17.945	0.401	2.126	0.269	0.572
CIFG16B7Mp28	*Sony Demo*	17.412	0.383	2.070	0.261	0.541
CIFG16B7Mp01	*Silence of the Lambs*	264.345	0.542	4.793	3.965	19.005
CIFG16B7Mp02	*Silence of the Lambs*	75.451	0.920	9.038	1.132	10.229
CIFG16B7Mp04	*Silence of the Lambs*	35.686	0.941	10.471	0.535	5.605
CIFG16B7Mp08	*Silence of the Lambs*	21.641	0.716	8.953	0.325	2.906
CIFG16B7Mp12	*Silence of the Lambs*	18.661	0.539	6.899	0.280	1.931
CIFG16B7Mp16	*Silence of the Lambs*	17.465	0.446	5.520	0.262	1.446
CIFG16B7Mp20	*Silence of the Lambs*	17.287	0.378	4.478	0.259	1.161
CIFG16B7Mp24	*Silence of the Lambs*	17.029	0.351	3.855	0.255	0.985
CIFG16B7Mp28	*Silence of the Lambs*	17.098	0.322	3.363	0.256	0.863
CIFG16B7Mp01	*Star Wars 4*	251.465	0.365	2.965	3.772	11.185
CIFG16B7Mp02	*Star Wars 4*	74.595	0.608	5.025	1.119	5.623
CIFG16B7Mp04	*Star Wars 4*	35.002	0.642	5.805	0.525	3.048
CIFG16B7Mp08	*Star Wars 4*	19.562	0.554	5.529	0.293	1.622
CIFG16B7Mp12	*Star Wars 4*	15.883	0.461	4.731	0.238	1.127
CIFG16B7Mp16	*Star Wars 4*	14.245	0.409	4.110	0.214	0.878
CIFG16B7Mp20	*Star Wars 4*	13.770	0.357	3.544	0.207	0.732
CIFG16B7Mp24	*Star Wars 4*	13.558	0.339	3.200	0.203	0.651
CIFG16B7Mp28	*Star Wars 4*	13.233	0.322	2.962	0.198	0.588
CIFG16B7Mp01	*Tokyo Olympics*	440.129	0.390	2.934	6.602	19.371

TABLE XXXI: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7Mp02	*Tokyo Olympics*	154.178	0.653	4.633	2.313	10.714
CIFG16B7Mp04	*Tokyo Olympics*	71.056	0.722	5.388	1.066	5.743
CIFG16B7Mp08	*Tokyo Olympics*	36.170	0.636	5.243	0.543	2.845
CIFG16B7Mp12	*Tokyo Olympics*	26.662	0.515	4.660	0.400	1.864
CIFG16B7Mp16	*Tokyo Olympics*	22.234	0.433	4.129	0.334	1.377
CIFG16B7Mp20	*Tokyo Olympics*	20.473	0.364	3.587	0.307	1.102
CIFG16B7Mp24	*Tokyo Olympics*	18.711	0.332	3.278	0.281	0.920
CIFG16B7Mp28	*Tokyo Olympics*	18.104	0.298	2.931	0.272	0.796
CIFG16B7Mp01	*NBC 12 News*	693.887	0.203	1.855	10.408	19.306
CIFG16B7Mp02	*NBC 12 News*	239.933	0.373	2.752	3.599	9.906
CIFG16B7Mp04	*NBC 12 News*	100.475	0.471	3.518	1.507	5.302
CIFG16B7Mp08	*NBC 12 News*	46.124	0.503	4.058	0.692	2.807
CIFG16B7Mp12	*NBC 12 News*	31.705	0.479	4.058	0.476	1.930
CIFG16B7Mp16	*NBC 12 News*	25.644	0.444	3.856	0.385	1.483
CIFG16B7Mp20	*NBC 12 News*	22.662	0.406	3.592	0.340	1.221
CIFG16B7Mp24	*NBC 12 News*	20.978	0.375	3.321	0.315	1.045
CIFG16B7Mp28	*NBC 12 News*	20.028	0.346	3.048	0.300	0.916

TABLE XXXII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B15Mp01	*Sony Demo*	557.272	0.418	2.254	8.359	18.843
CIFG16B15Mp02	*Sony Demo*	222.393	0.535	2.814	3.336	9.387
CIFG16B15Mp04	*Sony Demo*	101.302	0.553	2.896	1.520	4.401
CIFG16B15Mp08	*Sony Demo*	47.184	0.498	2.579	0.708	1.825
CIFG16B15Mp12	*Sony Demo*	32.952	0.424	2.448	0.494	1.210
CIFG16B15Mp16	*Sony Demo*	27.200	0.371	2.249	0.408	0.918
CIFG16B15Mp20	*Sony Demo*	24.817	0.329	2.066	0.372	0.769
CIFG16B15Mp24	*Sony Demo*	23.501	0.315	1.972	0.353	0.695
CIFG16B15Mp28	*Sony Demo*	23.019	0.292	1.860	0.345	0.642
CIFG16B15Mp01	*Silence of the Lambs*	283.736	0.547	4.694	4.256	19.978
CIFG16B15Mp02	*Silence of the Lambs*	85.073	0.890	8.254	1.276	10.533
CIFG16B15Mp04	*Silence of the Lambs*	42.060	0.858	9.209	0.631	5.810
CIFG16B15Mp08	*Silence of the Lambs*	27.522	0.571	7.350	0.413	3.034
CIFG16B15Mp12	*Silence of the Lambs*	24.801	0.377	5.443	0.372	2.025
CIFG16B15Mp16	*Silence of the Lambs*	23.761	0.264	4.244	0.356	1.513
CIFG16B15Mp20	*Silence of the Lambs*	23.592	0.222	3.427	0.354	1.213
CIFG16B15Mp24	*Silence of the Lambs*	23.118	0.207	2.970	0.347	1.030
CIFG16B15Mp28	*Silence of the Lambs*	23.168	0.190	2.586	0.348	0.899
CIFG16B15Mp01	*Star Wars 4*	276.369	0.367	2.795	4.146	11.588
CIFG16B15Mp02	*Star Wars 4*	86.310	0.588	4.515	1.295	5.846
CIFG16B15Mp04	*Star Wars 4*	42.604	0.588	4.980	0.639	3.183
CIFG16B15Mp08	*Star Wars 4*	25.640	0.452	4.450	0.385	1.712
CIFG16B15Mp12	*Star Wars 4*	22.054	0.333	3.631	0.331	1.201
CIFG16B15Mp16	*Star Wars 4*	20.110	0.271	3.114	0.302	0.939
CIFG16B15Mp20	*Star Wars 4*	19.247	0.228	2.785	0.289	0.804
CIFG16B15Mp24	*Star Wars 4*	19.448	0.213	2.438	0.292	0.711
CIFG16B15Mp28	*Star Wars 4*	18.550	0.202	2.324	0.278	0.647
CIFG16B15Mp01	*NBC 12 News*	714.030	0.209	1.834	10.710	19.638
CIFG16B15Mp02	*NBC 12 News*	254.480	0.376	2.550	3.817	9.735
CIFG16B15Mp04	*NBC 12 News*	108.879	0.473	3.179	1.633	5.192
CIFG16B15Mp08	*NBC 12 News*	52.051	0.475	3.515	0.781	2.744
CIFG16B15Mp12	*NBC 12 News*	36.968	0.422	3.407	0.555	1.889
CIFG16B15Mp16	*NBC 12 News*	30.630	0.365	3.177	0.459	1.460
CIFG16B15Mp20	*NBC 12 News*	27.510	0.316	2.936	0.413	1.211
CIFG16B15Mp24	*NBC 12 News*	25.748	0.279	2.712	0.386	1.047
CIFG16B15Mp28	*NBC 12 News*	24.718	0.250	2.497	0.371	0.926

TABLE XXXIII: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]

TABLE XXXIII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG12B2Mp01	*Sony Demo*	347.775	0.417	2.321	6.956	16.142
CIFG12B2Mp02	*Sony Demo*	133.431	0.530	2.940	2.669	7.846
CIFG12B2Mp04	*Sony Demo*	60.401	0.543	3.001	1.208	3.626
CIFG12B2Mp08	*Sony Demo*	27.071	0.524	3.090	0.541	1.673
CIFG12B2Mp12	*Sony Demo*	17.583	0.490	3.068	0.352	1.079
CIFG12B2Mp16	*Sony Demo*	13.539	0.459	2.937	0.271	0.795
CIFG12B2Mp20	*Sony Demo*	11.601	0.431	2.760	0.232	0.640
CIFG12B2Mp24	*Sony Demo*	10.534	0.415	2.570	0.211	0.541
CIFG12B2Mp28	*Sony Demo*	9.955	0.401	2.418	0.199	0.481
CIFG12B2Mp01	*Silence of the Lambs*	183.213	0.505	4.591	3.664	16.824
CIFG12B2Mp02	*Silence of the Lambs*	49.518	0.906	8.921	0.990	8.835
CIFG12B2Mp04	*Silence of the Lambs*	22.911	0.956	10.474	0.458	4.800
CIFG12B2Mp08	*Silence of the Lambs*	12.801	0.815	9.715	0.256	2.487
CIFG12B2Mp12	*Silence of the Lambs*	10.320	0.679	8.049	0.206	1.661
CIFG12B2Mp16	*Silence of the Lambs*	9.330	0.596	6.703	0.187	1.251
CIFG12B2Mp20	*Silence of the Lambs*	8.986	0.531	5.621	0.180	1.010
CIFG12B2Mp24	*Silence of the Lambs*	8.765	0.499	4.855	0.175	0.851
CIFG12B2Mp28	*Silence of the Lambs*	8.683	0.468	4.296	0.174	0.746

TABLE XXXIV: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3MpRC1	*Sony Demo*	106.430	1.617	6.953	1.596	11.101
CIFG16B3MpRC2	*Sony Demo*	34.785	2.266	16.223	0.522	8.465
CIFG16B3MpRC3	*Sony Demo*	15.429	0.328	2.903	0.231	0.672
CIFG16B3MpRC1	*Silence of the Lambs*	30.811	0.395	15.383	0.462	7.110
CIFG16B3MpRC2	*Silence of the Lambs*	17.404	0.435	15.477	0.261	4.040
CIFG16B3MpRC3	*Silence of the Lambs*	13.332	0.507	14.997	0.200	2.999
CIFG16B3MpRC1	*Star Wars 4*	30.337	0.383	8.533	0.455	3.883
CIFG16B3MpRC2	*Star Wars 4*	15.901	0.471	14.413	0.239	3.438
CIFG16B3MpRC3	*Star Wars 4*	10.603	0.599	17.651	0.159	2.807
CIFG16B3MpRC1	*Tokyo Olympics*	70.744	0.936	11.648	1.061	12.361
CIFG16B3MpRC2	*Tokyo Olympics*	31.375	0.194	5.828	0.471	2.743
CIFG16B3MpRC3	*Tokyo Olympics*	16.843	0.306	7.027	0.253	1.775
CIFG16B3MpRC1	*NBC 12 News*	93.465	0.024	1.104	1.402	1.548
CIFG16B3MpRC2	*NBC 12 News*	41.781	0.052	1.394	0.627	0.874
CIFG16B3MpRC3	*NBC 12 News*	19.245	0.347	5.436	0.289	1.569

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TABLE XXXV: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B1SV10	*Sony Demo*	298.844	0.450	2.233	4.483	10.010
CIFG16B1SV16	*Sony Demo*	154.099	0.504	2.563	2.311	5.924
CIFG16B1SV22	*Sony Demo*	76.528	0.525	2.699	1.148	3.098
CIFG16B1SV24	*Sony Demo*	59.582	0.532	2.713	0.894	2.425
CIFG16B1SV28	*Sony Demo*	35.723	0.540	2.711	0.536	1.453
CIFG16B1SV34	*Sony Demo*	15.671	0.528	2.844	0.235	0.669
CIFG16B1SV38	*Sony Demo*	9.140	0.517	2.995	0.137	0.411
CIFG16B1SV42	*Sony Demo*	5.221	0.511	3.079	0.078	0.241
CIFG16B1SV48	*Sony Demo*	2.466	0.492	3.046	0.037	0.113
CIFG16B1SV10	*Silence of the Lambs*	164.052	0.510	4.000	2.461	9.843
CIFG16B1SV16	*Silence of the Lambs*	60.632	0.852	7.170	0.909	6.521
CIFG16B1SV22	*Silence of the Lambs*	26.238	1.041	10.361	0.394	4.078
CIFG16B1SV24	*Silence of the Lambs*	20.239	1.070	11.271	0.304	3.422
CIFG16B1SV28	*Silence of the Lambs*	12.321	1.103	12.847	0.185	2.374
CIFG16B1SV34	*Silence of the Lambs*	5.943	1.084	14.312	0.089	1.276
CIFG16B1SV38	*Silence of the Lambs*	3.755	1.020	14.447	0.056	0.814
CIFG16B1SV42	*Silence of the Lambs*	2.348	0.902	13.494	0.035	0.475
CIFG16B1SV48	*Silence of the Lambs*	1.260	0.690	10.177	0.019	0.192
CIFG16B1SV10	*Star Wars 4*	143.624	0.419	3.137	2.154	6.758
CIFG16B1SV16	*Star Wars 4*	57.993	0.584	4.938	0.870	4.296
CIFG16B1SV22	*Star Wars 4*	27.113	0.654	6.444	0.407	2.621
CIFG16B1SV24	*Star Wars 4*	21.225	0.666	6.860	0.318	2.184
CIFG16B1SV28	*Star Wars 4*	13.186	0.684	7.657	0.198	1.515
CIFG16B1SV34	*Star Wars 4*	6.420	0.690	8.664	0.096	0.834
CIFG16B1SV38	*Star Wars 4*	4.110	0.682	9.257	0.062	0.571
CIFG16B1SV42	*Star Wars 4*	2.614	0.657	9.574	0.039	0.375
CIFG16B1SV48	*Star Wars 4*	1.433	0.591	9.399	0.021	0.202
CIFG16B1SV10	*Tokyo olympics*	275.821	0.305	2.397	4.137	9.916
CIFG16B1SV16	*Tokyo olympics*	135.055	0.450	3.374	2.026	6.835
CIFG16B1SV22	*Tokyo olympics*	57.255	0.657	5.079	0.859	4.362
CIFG16B1SV24	*Tokyo olympics*	43.157	0.707	5.673	0.647	3.672
CIFG16B1SV28	*Tokyo olympics*	25.951	0.761	6.575	0.389	2.559
CIFG16B1SV34	*Tokyo olympics*	12.416	0.772	7.494	0.186	1.396
CIFG16B1SV38	*Tokyo olympics*	7.821	0.748	7.756	0.117	0.910
CIFG16B1SV42	*Tokyo olympics*	4.797	0.697	7.623	0.072	0.549
CIFG16B1SV48	*Tokyo olympics*	2.341	0.602	6.465	0.035	0.227
CIFG16B1SV10	*NBC 12 News*	516.751	0.171	1.599	7.751	12.398
CIFG16B1SV16	*NBC 12 News*	258.641	0.276	2.070	3.880	8.031
CIFG16B1SV22	*NBC 12 News*	103.579	0.444	3.006	1.554	4.671
CIFG16B1SV24	*NBC 12 News*	74.333	0.500	3.373	1.115	3.761
CIFG16B1SV28	*NBC 12 News*	40.619	0.561	3.727	0.609	2.271
CIFG16B1SV34	*NBC 12 News*	17.863	0.572	4.189	0.268	1.122
CIFG16B1SV38	*NBC 12 News*	10.895	0.550	4.534	0.163	0.741
CIFG16B1SV42	*NBC 12 News*	6.570	0.516	4.741	0.099	0.467
CIFG16B1SV48	*NBC 12 News*	3.190	0.476	4.962	0.048	0.237

TABLE XXXVI: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3SV10	*Sony Demo*	286.751	0.442	2.262	4.301	9.728
CIFG16B3SV16	*Sony Demo*	146.904	0.491	2.572	2.204	5.668
CIFG16B3SV22	*Sony Demo*	72.676	0.493	2.618	1.090	2.854
CIFG16B3SV24	*Sony Demo*	57.014	0.496	2.611	0.855	2.233
CIFG16B3SV28	*Sony Demo*	35.875	0.499	2.606	0.538	1.402
CIFG16B3SV34	*Sony Demo*	17.183	0.499	2.650	0.258	0.683
CIFG16B3SV38	*Sony Demo*	10.028	0.495	2.783	0.150	0.419
CIFG16B3SV42	*Sony Demo*	6.030	0.496	2.810	0.090	0.254
CIFG16B3SV48	*Sony Demo*	2.784	0.486	2.851	0.042	0.119
CIFG16B3SV10	*Silence of the Lambs*	157.541	0.491	4.126	2.363	9.750
CIFG16B3SV16	*Silence of the Lambs*	60.999	0.791	7.039	0.915	6.441
CIFG16B3SV22	*Silence of the Lambs*	26.805	0.960	9.969	0.402	4.008

TABLE XXXVI: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B3SV24	*Silence of the Lambs*	20.651	0.997	10.868	0.310	3.366
CIFG16B3SV28	*Silence of the Lambs*	12.965	1.021	11.943	0.194	2.323
CIFG16B3SV34	*Silence of the Lambs*	6.497	1.008	12.726	0.097	1.240
CIFG16B3SV38	*Silence of the Lambs*	4.033	0.965	12.747	0.061	0.771
CIFG16B3SV42	*Silence of the Lambs*	2.584	0.884	11.984	0.039	0.464
CIFG16B3SV48	*Silence of the Lambs*	1.354	0.705	9.848	0.020	0.200
CIFG16B3SV10	*Star Wars 4*	139.461	0.396	3.177	2.092	6.647
CIFG16B3SV16	*Star Wars 4*	59.004	0.547	4.728	0.885	4.185
CIFG16B3SV22	*Star Wars 4*	27.955	0.612	6.086	0.419	2.552
CIFG16B3SV24	*Star Wars 4*	21.801	0.626	6.502	0.327	2.126
CIFG16B3SV28	*Star Wars 4*	13.871	0.635	7.051	0.208	1.467
CIFG16B3SV34	*Star Wars 4*	7.021	0.643	7.702	0.105	0.811
CIFG16B3SV38	*Star Wars 4*	4.409	0.644	8.174	0.066	0.541
CIFG16B3SV42	*Star Wars 4*	2.884	0.631	8.343	0.043	0.361
CIFG16B3SV48	*Star Wars 4*	1.548	0.584	8.454	0.023	0.196
CIFG16B3SV10	*Tokyo olympics*	264.956	0.309	2.455	3.974	9.756
CIFG16B3SV16	*Tokyo olympics*	128.793	0.454	3.458	1.932	6.681
CIFG16B3SV22	*Tokyo olympics*	56.153	0.623	5.002	0.842	4.213
CIFG16B3SV24	*Tokyo olympics*	42.547	0.672	5.558	0.638	3.547
CIFG16B3SV28	*Tokyo olympics*	26.124	0.718	6.256	0.392	2.452
CIFG16B3SV34	*Tokyo olympics*	13.076	0.738	6.866	0.196	1.347
CIFG16B3SV38	*Tokyo olympics*	8.169	0.721	6.990	0.123	0.856
CIFG16B3SV42	*Tokyo olympics*	5.229	0.686	6.707	0.078	0.526
CIFG16B3SV48	*Tokyo olympics*	2.575	0.612	5.903	0.039	0.228
CIFG16B3SV10	*NBC 12 News*	500.233	0.175	1.634	7.503	12.261
CIFG16B3SV16	*NBC 12 News*	246.497	0.283	2.113	3.697	7.814
CIFG16B3SV22	*NBC 12 News*	99.411	0.430	2.975	1.491	4.435
CIFG16B3SV24	*NBC 12 News*	72.212	0.479	3.270	1.083	3.542
CIFG16B3SV28	*NBC 12 News*	40.420	0.528	3.588	0.606	2.176
CIFG16B3SV34	*NBC 12 News*	18.542	0.531	3.991	0.278	1.110
CIFG16B3SV38	*NBC 12 News*	11.322	0.511	4.254	0.170	0.722
CIFG16B3SV42	*NBC 12 News*	7.179	0.483	4.386	0.108	0.472
CIFG16B3SV48	*NBC 12 News*	3.577	0.450	4.617	0.054	0.248

TABLE XXXVII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7SV10	*Sony Demo*	271.033	0.455	2.334	4.065	9.490
CIFG16B7SV16	*Sony Demo*	137.184	0.495	2.642	2.058	5.436
CIFG16B7SV22	*Sony Demo*	65.897	0.489	2.666	0.988	2.635
CIFG16B7SV24	*Sony Demo*	52.188	0.483	2.620	0.783	2.051
CIFG16B7SV28	*Sony Demo*	32.737	0.472	2.634	0.491	1.293
CIFG16B7SV34	*Sony Demo*	16.398	0.472	2.654	0.246	0.653
CIFG16B7SV38	*Sony Demo*	10.230	0.475	2.800	0.153	0.430
CIFG16B7SV42	*Sony Demo*	6.154	0.480	2.876	0.092	0.266
CIFG16B7SV48	*Sony Demo*	2.945	0.475	2.831	0.044	0.125
CIFG16B7SV10	*Silence of the Lambs*	140.535	0.543	4.555	2.108	9.601
CIFG16B7SV16	*Silence of the Lambs*	56.278	0.800	7.492	0.844	6.324
CIFG16B7SV22	*Silence of the Lambs*	24.803	0.953	10.484	0.372	3.901
CIFG16B7SV24	*Silence of the Lambs*	19.455	0.980	11.285	0.292	3.293
CIFG16B7SV28	*Silence of the Lambs*	12.327	0.988	12.125	0.185	2.242
CIFG16B7SV34	*Silence of the Lambs*	6.339	0.964	12.480	0.095	1.187
CIFG16B7SV38	*Silence of the Lambs*	4.094	0.921	12.082	0.061	0.742
CIFG16B7SV42	*Silence of the Lambs*	2.605	0.851	11.208	0.039	0.438
CIFG16B7SV48	*Silence of the Lambs*	1.387	0.697	8.948	0.021	0.186
CIFG16B7SV10	*Star Wars 4*	126.438	0.423	3.423	1.897	6.492
CIFG16B7SV16	*Star Wars 4*	55.197	0.544	4.965	0.828	4.111
CIFG16B7SV22	*Star Wars 4*	26.050	0.608	6.365	0.391	2.487
CIFG16B7SV24	*Star Wars 4*	20.712	0.616	6.683	0.311	2.076
CIFG16B7SV28	*Star Wars 4*	13.160	0.620	7.174	0.197	1.416
CIFG16B7SV34	*Star Wars 4*	6.787	0.620	7.711	0.102	0.785
CIFG16B7SV38	*Star Wars 4*	4.419	0.618	7.902	0.066	0.524
CIFG16B7SV42	*Star Wars 4*	2.870	0.609	7.987	0.043	0.344
CIFG16B7SV48	*Star Wars 4*	1.584	0.574	8.202	0.024	0.195
CIFG16B7SV10	*Tokyo olympics*	252.632	0.321	2.524	3.789	9.563

TABLE XXXVII: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B7SV16	*Tokyo olympics*	119.525	0.475	3.623	1.793	6.495
CIFG16B7SV22	*Tokyo olympics*	51.164	0.642	5.268	0.767	4.043
CIFG16B7SV24	*Tokyo olympics*	39.423	0.678	5.741	0.591	3.395
CIFG16B7SV28	*Tokyo olympics*	24.152	0.708	6.389	0.362	2.315
CIFG16B7SV34	*Tokyo olympics*	12.339	0.711	6.777	0.185	1.254
CIFG16B7SV38	*Tokyo olympics*	8.008	0.692	6.705	0.120	0.805
CIFG16B7SV42	*Tokyo olympics*	5.119	0.657	6.329	0.077	0.486
CIFG16B7SV48	*Tokyo olympics*	2.618	0.598	5.367	0.039	0.211
CIFG16B7SV10	*NBC 12 News*	481.970	0.182	1.671	7.230	12.084
CIFG16B7SV16	*NBC 12 News*	231.149	0.301	2.214	3.467	7.676
CIFG16B7SV22	*NBC 12 News*	89.934	0.458	3.195	1.349	4.311
CIFG16B7SV24	*NBC 12 News*	66.186	0.496	3.445	0.993	3.420
CIFG16B7SV28	*NBC 12 News*	37.147	0.529	3.713	0.557	2.069
CIFG16B7SV34	*NBC 12 News*	17.432	0.517	4.001	0.261	1.046
CIFG16B7SV38	*NBC 12 News*	11.126	0.491	4.135	0.167	0.690
CIFG16B7SV42	*NBC 12 News*	7.071	0.463	4.234	0.106	0.449
CIFG16B7SV48	*NBC 12 News*	3.660	0.432	4.428	0.055	0.243

TABLE XXXVIII: Overview of GoP statistics of single–layer traces.

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B15SV10	*Sony Demo*	274.093	0.459	2.340	4.111	9.619
CIFG16B15SV16	*Sony Demo*	138.122	0.500	2.657	2.072	5.504
CIFG16B15SV22	*Sony Demo*	66.096	0.491	2.674	0.991	2.651
CIFG16B15SV24	*Sony Demo*	51.578	0.481	2.675	0.774	2.070
CIFG16B15SV28	*Sony Demo*	32.856	0.459	2.639	0.493	1.301
CIFG16B15SV34	*Sony Demo*	16.981	0.451	2.521	0.255	0.642
CIFG16B15SV38	*Sony Demo*	10.827	0.460	2.439	0.162	0.396
CIFG16B15SV42	*Sony Demo*	6.792	0.468	2.395	0.102	0.244
CIFG16B15SV48	*Sony Demo*	3.333	0.461	2.465	0.050	0.123
CIFG16B15SV10	*Silence of the Lambs*	143.022	0.547	4.562	2.145	9.787
CIFG16B15SV16	*Silence of the Lambs*	56.118	0.814	7.686	0.842	6.470
CIFG16B15SV22	*Silence of the Lambs*	25.068	0.948	10.686	0.376	4.018
CIFG16B15SV24	*Silence of the Lambs*	19.451	0.971	11.527	0.292	3.363
CIFG16B15SV28	*Silence of the Lambs*	12.494	0.974	12.381	0.187	2.320
CIFG16B15SV34	*Silence of the Lambs*	6.577	0.941	12.459	0.099	1.229
CIFG16B15SV38	*Silence of the Lambs*	4.283	0.893	11.783	0.064	0.757
CIFG16B15SV42	*Silence of the Lambs*	2.792	0.824	10.513	0.042	0.440
CIFG16B15SV48	*Silence of the Lambs*	1.497	0.693	8.362	0.022	0.188
CIFG16B15SV10	*Star Wars 4*	127.341	0.434	3.474	1.910	6.635
CIFG16B15SV16	*Star Wars 4*	54.820	0.553	5.107	0.822	4.200
CIFG16B15SV22	*Star Wars 4*	26.330	0.602	6.466	0.395	2.554
CIFG16B15SV24	*Star Wars 4*	20.674	0.611	6.848	0.310	2.124
CIFG16B15SV28	*Star Wars 4*	13.336	0.609	7.284	0.200	1.457
CIFG16B15SV34	*Star Wars 4*	6.953	0.601	7.747	0.104	0.808
CIFG16B15SV38	*Star Wars 4*	4.539	0.593	7.849	0.068	0.534
CIFG16B15SV42	*Star Wars 4*	3.007	0.580	7.847	0.045	0.354
CIFG16B15SV48	*Star Wars 4*	1.675	0.548	7.870	0.025	0.198
CIFG16B15SV10	*Tokyo olympics*	258.273	0.318	2.501	3.874	9.690
CIFG16B15SV16	*Tokyo olympics*	121.739	0.477	3.613	1.826	6.598
CIFG16B15SV22	*Tokyo olympics*	51.595	0.649	5.308	0.774	4.108
CIFG16B15SV24	*Tokyo olympics*	39.201	0.684	5.821	0.588	3.423
CIFG16B15SV28	*Tokyo olympics*	24.120	0.710	6.491	0.362	2.348
CIFG16B15SV34	*Tokyo olympics*	12.365	0.697	6.831	0.185	1.267
CIFG16B15SV38	*Tokyo olympics*	8.041	0.670	6.700	0.121	0.808
CIFG16B15SV42	*Tokyo olympics*	5.240	0.633	6.152	0.079	0.484
CIFG16B15SV48	*Tokyo olympics*	2.741	0.577	5.066	0.041	0.208
CIFG16B15SV10	*NBC 12 News*	489.422	0.181	1.670	7.341	12.257
CIFG16B15SV16	*NBC 12 News*	234.615	0.302	2.227	3.519	7.839
CIFG16B15SV22	*NBC 12 News*	90.120	0.472	3.273	1.352	4.425
CIFG16B15SV24	*NBC 12 News*	65.082	0.514	3.585	0.976	3.500
CIFG16B15SV28	*NBC 12 News*	36.734	0.543	3.844	0.551	2.118
CIFG16B15SV34	*NBC 12 News*	17.440	0.515	4.034	0.262	1.055
CIFG16B15SV38	*NBC 12 News*	11.164	0.482	4.070	0.167	0.681
CIFG16B15SV42	*NBC 12 News*	7.279	0.448	4.035	0.109	0.441

TABLE XXXVIII: *continued*

		GoP Size			Bit Rate	
		Mean	CoV	Peak/Mean	Mean	Peak
Enc. M.	Video	$\bar{Y}$ [kbyte]	$S_Y/\bar{Y}$	$Y_{\max}/\bar{Y}$	$\bar{Y}/(Gt)$ [Mbps]	$Y_{\max}/(Gt)$ [Mbps]
CIFG16B15SV48	*NBC 12 News*	3.871	0.411	4.007	0.058	0.233

APPENDIX III
LONG RANGE DEPENDENCE STATISTICS

A. H.264/AVC

TABLE XXXIX: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B1F10	*Sony Demo*	0.976	0.860	0.833	0.799	0.797	0.787	0.740	0.879	0.708	0.615	0.605	0.575
CIFG16B1F16	*Sony Demo*	0.936	0.863	0.847	0.829	0.820	0.834	0.768	0.869	0.698	0.575	0.585	0.594
CIFG16B1F22	*Sony Demo*	0.862	0.885	0.884	0.866	0.849	0.858	0.774	0.845	0.708	0.522	0.572	0.614
CIFG16B1F24	*Sony Demo*	0.841	0.889	0.882	0.872	0.863	0.857	0.773	0.848	0.720	0.512	0.566	0.620
CIFG16B1F28	*Sony Demo*	0.805	0.890	0.877	0.878	0.857	0.861	0.769	0.843	0.718	0.501	0.574	0.661
CIFG16B1F34	*Sony Demo*	0.758	0.895	0.867	0.876	0.852	0.834	0.694	0.831	0.668	0.464	0.638	0.819
CIFG16B1F38	*Sony Demo*	0.740	0.895	0.868	0.886	0.871	0.827	0.703	0.817	0.655	0.403	0.629	0.793
CIFG16B1F42	*Sony Demo*	0.735	0.902	0.879	0.873	0.842	0.787	0.682	0.787	0.597	0.396	0.629	0.844
CIFG16B1F48	*Sony Demo*	0.741	0.896	0.855	0.829	0.791	0.737	0.645	0.663	0.610	0.590	0.758	1.087
CIFG16B1F10	*Silence of the Lambs*	0.968	0.917	0.907	0.918	0.898	0.906	0.882	0.951	0.941	0.920	0.903	0.919
CIFG16B1F16	*Silence of the Lambs*	0.943	0.899	0.889	0.901	0.883	0.881	0.885	0.936	0.921	0.916	0.880	0.908
CIFG16B1F22	*Silence of the Lambs*	0.909	0.888	0.878	0.885	0.867	0.863	0.876	0.921	0.890	0.885	0.844	0.890
CIFG16B1F24	*Silence of the Lambs*	0.899	0.886	0.875	0.881	0.863	0.858	0.874	0.920	0.880	0.876	0.833	0.886
CIFG16B1F28	*Silence of the Lambs*	0.879	0.884	0.870	0.875	0.860	0.849	0.866	0.907	0.867	0.869	0.825	0.880
CIFG16B1F34	*Silence of the Lambs*	0.862	0.884	0.868	0.864	0.857	0.847	0.855	0.898	0.864	0.868	0.838	0.875
CIFG16B1F38	*Silence of the Lambs*	0.852	0.884	0.868	0.858	0.854	0.849	0.856	0.900	0.872	0.871	0.862	0.874
CIFG16B1F42	*Silence of the Lambs*	0.844	0.877	0.864	0.858	0.858	0.850	0.853	0.904	0.871	0.874	0.873	0.876
CIFG16B1F48	*Silence of the Lambs*	0.825	0.863	0.850	0.854	0.864	0.851	0.840	0.903	0.848	0.873	0.882	0.881
CIFG16B1F10	*Star Wars 4*	0.916	0.855	0.857	0.867	0.839	0.854	0.810	0.826	0.812	0.844	0.853	0.789
CIFG16B1F16	*Star Wars 4*	0.888	0.856	0.859	0.872	0.850	0.867	0.850	0.874	0.875	0.918	0.961	0.878
CIFG16B1F22	*Star Wars 4*	0.869	0.855	0.857	0.872	0.858	0.876	0.872	0.896	0.906	0.959	1.008	0.933
CIFG16B1F24	*Star Wars 4*	0.864	0.855	0.856	0.872	0.863	0.881	0.877	0.900	0.911	0.960	1.018	0.941
CIFG16B1F28	*Star Wars 4*	0.852	0.856	0.857	0.877	0.870	0.891	0.888	0.909	0.916	0.962	1.034	0.959
CIFG16B1F34	*Star Wars 4*	0.838	0.858	0.859	0.883	0.875	0.895	0.897	0.919	0.924	0.972	1.050	0.997
CIFG16B1F38	*Star Wars 4*	0.831	0.856	0.860	0.885	0.874	0.893	0.899	0.926	0.930	0.981	1.065	1.025
CIFG16B1F42	*Star Wars 4*	0.819	0.851	0.859	0.885	0.871	0.885	0.899	0.927	0.939	0.988	1.078	1.045
CIFG16B1F48	*Star Wars 4*	0.805	0.848	0.855	0.879	0.867	0.884	0.891	0.924	0.952	0.982	1.075	1.043
CIFG16B1F10	*Tokyo Olympics*	0.935	0.881	0.859	0.857	0.835	0.819	0.819	0.820	0.827	0.824	0.842	0.803
CIFG16B1F16	*Tokyo Olympics*	0.959	0.885	0.871	0.870	0.849	0.849	0.859	0.855	0.863	0.860	0.887	0.858
CIFG16B1F22	*Tokyo Olympics*	0.948	0.885	0.877	0.866	0.863	0.870	0.892	0.885	0.889	0.868	0.915	0.900
CIFG16B1F24	*Tokyo Olympics*	0.942	0.884	0.877	0.863	0.862	0.875	0.899	0.888	0.887	0.868	0.918	0.902
CIFG16B1F28	*Tokyo Olympics*	0.928	0.879	0.875	0.859	0.861	0.878	0.913	0.893	0.886	0.872	0.922	0.900
CIFG16B1F34	*Tokyo Olympics*	0.908	0.876	0.871	0.855	0.855	0.873	0.911	0.896	0.886	0.880	0.921	0.892
CIFG16B1F38	*Tokyo Olympics*	0.901	0.877	0.873	0.854	0.859	0.876	0.906	0.900	0.887	0.888	0.919	0.884
CIFG16B1F42	*Tokyo Olympics*	0.891	0.874	0.873	0.852	0.859	0.881	0.901	0.903	0.887	0.875	0.902	0.868
CIFG16B1F48	*Tokyo Olympics*	0.878	0.870	0.861	0.846	0.858	0.879	0.872	0.874	0.853	0.854	0.877	0.846
CIFG16B1F10	*NBC 12 News*	0.950	0.880	0.878	0.897	0.881	0.899	0.861	0.866	0.855	0.870	0.834	0.794
CIFG16B1F16	*NBC 12 News*	0.950	0.870	0.875	0.898	0.884	0.882	0.843	0.870	0.845	0.825	0.811	0.752
CIFG16B1F22	*NBC 12 News*	0.902	0.851	0.849	0.873	0.864	0.841	0.798	0.828	0.794	0.777	0.753	0.695
CIFG16B1F24	*NBC 12 News*	0.878	0.841	0.837	0.856	0.845	0.809	0.794	0.802	0.771	0.778	0.743	0.659
CIFG16B1F28	*NBC 12 News*	0.838	0.825	0.822	0.830	0.822	0.774	0.796	0.772	0.751	0.790	0.775	0.613
CIFG16B1F34	*NBC 12 News*	0.792	0.813	0.818	0.815	0.803	0.758	0.802	0.768	0.720	0.805	0.745	0.599
CIFG16B1F38	*NBC 12 News*	0.768	0.806	0.813	0.805	0.788	0.756	0.798	0.763	0.697	0.784	0.720	0.607
CIFG16B1F42	*NBC 12 News*	0.747	0.798	0.802	0.792	0.772	0.746	0.791	0.774	0.691	0.769	0.694	0.657
CIFG16B1F48	*NBC 12 News*	0.728	0.789	0.775	0.763	0.758	0.738	0.808	0.763	0.717	0.778	0.800	0.730

TABLE XL: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3F10	*Sony Demo*	0.960	0.866	0.844	0.799	0.774	0.795	0.779	0.874	0.776	0.697	0.655	0.545
CIFG16B3F16	*Sony Demo*	0.928	0.879	0.859	0.830	0.813	0.845	0.788	0.861	0.805	0.646	0.610	0.589
CIFG16B3F22	*Sony Demo*	0.846	0.871	0.864	0.868	0.840	0.845	0.735	0.859	0.767	0.526	0.519	0.672
CIFG16B3F24	*Sony Demo*	0.819	0.876	0.871	0.872	0.845	0.846	0.724	0.869	0.768	0.466	0.498	0.689
CIFG16B3F28	*Sony Demo*	0.781	0.889	0.873	0.874	0.856	0.853	0.705	0.872	0.759	0.425	0.553	0.741
CIFG16B3F34	*Sony Demo*	0.738	0.898	0.864	0.876	0.855	0.836	0.678	0.853	0.729	0.414	0.608	0.803
CIFG16B3F38	*Sony Demo*	0.732	0.908	0.874	0.885	0.878	0.841	0.705	0.843	0.698	0.324	0.566	0.732
CIFG16B3F42	*Sony Demo*	0.731	0.907	0.888	0.878	0.858	0.809	0.690	0.793	0.587	0.359	0.595	0.765
CIFG16B3F48	*Sony Demo*	0.725	0.912	0.863	0.845	0.817	0.740	0.657	0.668	0.556	0.520	0.699	0.942

TABLE XL: *continued*

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3F10	*Silence of the Lambs*	0.953	0.912	0.899	0.909	0.889	0.896	0.885	0.950	0.941	0.908	0.893	0.915
CIFG16B3F16	*Silence of the Lambs*	0.927	0.893	0.882	0.889	0.874	0.871	0.878	0.925	0.901	0.887	0.852	0.896
CIFG16B3F22	*Silence of the Lambs*	0.897	0.882	0.870	0.880	0.861	0.854	0.866	0.909	0.864	0.858	0.819	0.878
CIFG16B3F24	*Silence of the Lambs*	0.890	0.881	0.868	0.876	0.858	0.848	0.860	0.898	0.856	0.852	0.813	0.872
CIFG16B3F28	*Silence of the Lambs*	0.872	0.879	0.864	0.871	0.859	0.842	0.854	0.892	0.850	0.854	0.812	0.869
CIFG16B3F34	*Silence of the Lambs*	0.852	0.883	0.866	0.867	0.865	0.841	0.849	0.890	0.859	0.867	0.840	0.878
CIFG16B3F38	*Silence of the Lambs*	0.840	0.880	0.868	0.863	0.863	0.840	0.851	0.894	0.874	0.871	0.866	0.883
CIFG16B3F42	*Silence of the Lambs*	0.827	0.875	0.862	0.858	0.862	0.846	0.858	0.905	0.886	0.883	0.882	0.892
CIFG16B3F48	*Silence of the Lambs*	0.793	0.855	0.847	0.852	0.859	0.849	0.858	0.920	0.872	0.899	0.887	0.910
CIFG16B3F10	*Star Wars 4*	0.913	0.853	0.859	0.872	0.848	0.865	0.827	0.855	0.840	0.875	0.896	0.830
CIFG16B3F16	*Star Wars 4*	0.887	0.855	0.862	0.876	0.855	0.877	0.859	0.890	0.884	0.940	0.989	0.911
CIFG16B3F22	*Star Wars 4*	0.864	0.851	0.858	0.875	0.859	0.883	0.873	0.899	0.904	0.959	1.014	0.944
CIFG16B3F24	*Star Wars 4*	0.858	0.851	0.859	0.877	0.862	0.887	0.878	0.902	0.906	0.958	1.019	0.945
CIFG16B3F28	*Star Wars 4*	0.845	0.854	0.860	0.879	0.870	0.897	0.890	0.907	0.910	0.958	1.024	0.956
CIFG16B3F34	*Star Wars 4*	0.831	0.860	0.861	0.885	0.877	0.897	0.901	0.920	0.924	0.975	1.051	0.989
CIFG16B3F38	*Star Wars 4*	0.825	0.852	0.861	0.886	0.876	0.890	0.899	0.926	0.927	0.982	1.070	1.020
CIFG16B3F42	*Star Wars 4*	0.810	0.848	0.858	0.884	0.872	0.886	0.900	0.931	0.946	1.001	1.087	1.047
CIFG16B3F48	*Star Wars 4*	0.785	0.854	0.859	0.885	0.878	0.894	0.904	0.949	0.970	0.990	1.090	1.060
CIFG16B3F10	*Tokyo Olympics*	0.948	0.888	0.869	0.857	0.836	0.821	0.823	0.823	0.832	0.829	0.839	0.807
CIFG16B3F16	*Tokyo Olympics*	0.959	0.889	0.880	0.867	0.858	0.857	0.862	0.858	0.865	0.855	0.889	0.866
CIFG16B3F22	*Tokyo Olympics*	0.943	0.885	0.878	0.861	0.861	0.876	0.900	0.883	0.884	0.872	0.917	0.897
CIFG16B3F24	*Tokyo Olympics*	0.934	0.885	0.879	0.860	0.861	0.875	0.904	0.885	0.885	0.871	0.916	0.896
CIFG16B3F28	*Tokyo Olympics*	0.919	0.881	0.877	0.855	0.857	0.871	0.907	0.888	0.885	0.870	0.916	0.894
CIFG16B3F34	*Tokyo Olympics*	0.896	0.879	0.870	0.850	0.852	0.867	0.905	0.890	0.884	0.872	0.915	0.892
CIFG16B3F38	*Tokyo Olympics*	0.885	0.872	0.867	0.848	0.853	0.869	0.901	0.892	0.884	0.877	0.913	0.882
CIFG16B3F42	*Tokyo Olympics*	0.867	0.873	0.865	0.846	0.855	0.877	0.899	0.900	0.884	0.868	0.897	0.864
CIFG16B3F48	*Tokyo Olympics*	0.846	0.866	0.854	0.842	0.853	0.880	0.888	0.872	0.858	0.855	0.884	0.843
CIFG16B3F10	*NBC 12 News*	0.933	0.872	0.872	0.889	0.882	0.890	0.856	0.868	0.846	0.860	0.825	0.781
CIFG16B3F16	*NBC 12 News*	0.931	0.866	0.873	0.893	0.878	0.866	0.834	0.854	0.815	0.790	0.797	0.727
CIFG16B3F22	*NBC 12 News*	0.887	0.844	0.837	0.854	0.846	0.813	0.787	0.801	0.759	0.765	0.748	0.659
CIFG16B3F24	*NBC 12 News*	0.866	0.833	0.826	0.836	0.830	0.787	0.790	0.781	0.748	0.764	0.754	0.619
CIFG16B3F28	*NBC 12 News*	0.826	0.820	0.818	0.820	0.816	0.769	0.802	0.769	0.741	0.796	0.769	0.614
CIFG16B3F34	*NBC 12 News*	0.777	0.812	0.816	0.814	0.803	0.764	0.812	0.781	0.738	0.804	0.746	0.630
CIFG16B3F38	*NBC 12 News*	0.754	0.805	0.807	0.804	0.789	0.759	0.804	0.782	0.725	0.786	0.726	0.635
CIFG16B3F42	*NBC 12 News*	0.729	0.796	0.795	0.786	0.765	0.743	0.791	0.766	0.697	0.771	0.694	0.644
CIFG16B3F48	*NBC 12 News*	0.701	0.788	0.768	0.745	0.734	0.709	0.792	0.723	0.678	0.758	0.693	0.684

TABLE XLI: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7F10	*Sony Demo*	0.964	0.878	0.852	0.811	0.777	0.798	0.781	0.866	0.839	0.703	0.679	0.604
CIFG16B7F16	*Sony Demo*	0.937	0.901	0.877	0.851	0.828	0.860	0.798	0.900	0.895	0.670	0.637	0.691
CIFG16B7F22	*Sony Demo*	0.866	0.888	0.873	0.877	0.851	0.831	0.724	0.913	0.868	0.549	0.476	0.732
CIFG16B7F24	*Sony Demo*	0.836	0.884	0.875	0.882	0.860	0.840	0.713	0.903	0.859	0.444	0.431	0.726
CIFG16B7F28	*Sony Demo*	0.782	0.893	0.884	0.879	0.860	0.857	0.697	0.899	0.834	0.415	0.513	0.761
CIFG16B7F34	*Sony Demo*	0.735	0.906	0.866	0.869	0.852	0.838	0.675	0.868	0.800	0.418	0.528	0.687
CIFG16B7F38	*Sony Demo*	0.727	0.912	0.876	0.876	0.857	0.828	0.693	0.853	0.769	0.333	0.455	0.625
CIFG16B7F42	*Sony Demo*	0.727	0.907	0.871	0.856	0.843	0.813	0.643	0.806	0.654	0.306	0.471	0.668
CIFG16B7F48	*Sony Demo*	0.734	0.902	0.861	0.842	0.817	0.757	0.680	0.666	0.547	0.533	0.672	0.868
CIFG16B7F10	*Silence of the Lambs*	0.959	0.903	0.891	0.910	0.885	0.889	0.887	0.950	0.945	0.910	0.901	0.913
CIFG16B7F16	*Silence of the Lambs*	0.928	0.889	0.879	0.882	0.865	0.866	0.878	0.927	0.901	0.875	0.845	0.890
CIFG16B7F22	*Silence of the Lambs*	0.898	0.882	0.869	0.876	0.852	0.850	0.863	0.901	0.859	0.840	0.802	0.862
CIFG16B7F24	*Silence of the Lambs*	0.890	0.882	0.868	0.875	0.849	0.844	0.854	0.889	0.848	0.832	0.795	0.856
CIFG16B7F28	*Silence of the Lambs*	0.877	0.881	0.864	0.869	0.847	0.837	0.841	0.878	0.839	0.830	0.795	0.854
CIFG16B7F34	*Silence of the Lambs*	0.854	0.881	0.861	0.862	0.852	0.834	0.838	0.882	0.849	0.852	0.830	0.869
CIFG16B7F38	*Silence of the Lambs*	0.840	0.878	0.862	0.863	0.857	0.832	0.844	0.889	0.869	0.864	0.863	0.878
CIFG16B7F42	*Silence of the Lambs*	0.824	0.870	0.858	0.859	0.847	0.835	0.850	0.892	0.886	0.877	0.891	0.893
CIFG16B7F48	*Silence of the Lambs*	0.768	0.845	0.837	0.843	0.845	0.839	0.863	0.917	0.892	0.921	0.902	0.928
CIFG16B7F10	*Star Wars 4*	0.917	0.859	0.863	0.872	0.853	0.872	0.841	0.871	0.854	0.902	0.928	0.863
CIFG16B7F16	*Star Wars 4*	0.893	0.861	0.867	0.879	0.865	0.884	0.868	0.907	0.887	0.957	1.020	0.941
CIFG16B7F22	*Star Wars 4*	0.871	0.857	0.862	0.876	0.869	0.891	0.875	0.913	0.901	0.959	1.033	0.962
CIFG16B7F24	*Star Wars 4*	0.866	0.855	0.862	0.876	0.871	0.896	0.879	0.913	0.906	0.954	1.029	0.961
CIFG16B7F28	*Star Wars 4*	0.856	0.853	0.862	0.879	0.877	0.902	0.892	0.913	0.912	0.955	1.028	0.962
CIFG16B7F34	*Star Wars 4*	0.836	0.852	0.858	0.879	0.880	0.901	0.902	0.926	0.921	0.970	1.052	0.980
CIFG16B7F38	*Star Wars 4*	0.830	0.846	0.855	0.878	0.875	0.892	0.899	0.930	0.927	0.980	1.075	1.014
CIFG16B7F42	*Star Wars 4*	0.812	0.841	0.850	0.870	0.870	0.882	0.898	0.926	0.938	0.999	1.087	1.040

TABLE XLI: *continued*

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7F48	*Star Wars 4*	0.783	0.852	0.851	0.879	0.878	0.899	0.903	0.950	0.984	0.993	1.083	1.048
CIFG16B7F10	*Tokyo Olympics*	0.954	0.888	0.871	0.859	0.838	0.825	0.831	0.828	0.837	0.833	0.851	0.816
CIFG16B7F16	*Tokyo Olympics*	0.963	0.890	0.883	0.864	0.859	0.855	0.867	0.857	0.866	0.858	0.893	0.867
CIFG16B7F22	*Tokyo Olympics*	0.943	0.881	0.876	0.860	0.860	0.874	0.891	0.877	0.879	0.876	0.919	0.897
CIFG16B7F24	*Tokyo Olympics*	0.938	0.879	0.877	0.856	0.857	0.873	0.893	0.879	0.880	0.878	0.917	0.893
CIFG16B7F28	*Tokyo Olympics*	0.921	0.878	0.877	0.855	0.854	0.869	0.896	0.882	0.881	0.878	0.911	0.887
CIFG16B7F34	*Tokyo Olympics*	0.897	0.879	0.874	0.853	0.852	0.864	0.895	0.884	0.879	0.872	0.909	0.884
CIFG16B7F38	*Tokyo Olympics*	0.880	0.871	0.866	0.851	0.854	0.867	0.896	0.886	0.881	0.872	0.903	0.880
CIFG16B7F42	*Tokyo Olympics*	0.862	0.871	0.866	0.843	0.852	0.873	0.892	0.894	0.877	0.862	0.890	0.857
CIFG16B7F48	*Tokyo Olympics*	0.835	0.864	0.854	0.827	0.834	0.859	0.881	0.851	0.847	0.854	0.883	0.829
CIFG16B7F10	*NBC 12 News*	0.925	0.868	0.872	0.890	0.888	0.887	0.853	0.866	0.845	0.865	0.828	0.786
CIFG16B7F16	*NBC 12 News*	0.923	0.865	0.873	0.895	0.884	0.864	0.827	0.849	0.811	0.783	0.799	0.730
CIFG16B7F22	*NBC 12 News*	0.879	0.836	0.830	0.850	0.838	0.803	0.774	0.789	0.751	0.746	0.768	0.652
CIFG16B7F24	*NBC 12 News*	0.859	0.827	0.820	0.832	0.819	0.783	0.776	0.765	0.737	0.748	0.771	0.608
CIFG16B7F28	*NBC 12 News*	0.822	0.815	0.815	0.817	0.806	0.764	0.795	0.754	0.731	0.781	0.775	0.597
CIFG16B7F34	*NBC 12 News*	0.774	0.807	0.812	0.807	0.791	0.760	0.813	0.771	0.723	0.795	0.744	0.623
CIFG16B7F38	*NBC 12 News*	0.752	0.803	0.804	0.798	0.781	0.756	0.803	0.774	0.709	0.777	0.717	0.639
CIFG16B7F42	*NBC 12 News*	0.728	0.798	0.795	0.780	0.762	0.748	0.794	0.765	0.691	0.772	0.691	0.648
CIFG16B7F48	*NBC 12 News*	0.698	0.792	0.779	0.742	0.720	0.694	0.787	0.710	0.711	0.752	0.688	0.679

TABLE XLII: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B15F10	*Sony Demo*	0.969	0.886	0.871	0.822	0.793	0.805	0.782	0.861	0.861	0.672	0.636	0.655
CIFG16B15F16	*Sony Demo*	0.949	0.905	0.893	0.863	0.842	0.852	0.811	0.879	0.899	0.661	0.609	0.741
CIFG16B15F22	*Sony Demo*	0.891	0.903	0.885	0.884	0.866	0.832	0.726	0.914	0.864	0.548	0.452	0.797
CIFG16B15F24	*Sony Demo*	0.868	0.901	0.883	0.882	0.859	0.828	0.721	0.933	0.845	0.488	0.395	0.771
CIFG16B15F28	*Sony Demo*	0.817	0.902	0.889	0.893	0.864	0.859	0.736	0.919	0.840	0.399	0.430	0.791
CIFG16B15F34	*Sony Demo*	0.743	0.905	0.867	0.873	0.863	0.851	0.706	0.894	0.854	0.480	0.526	0.795
CIFG16B15F38	*Sony Demo*	0.729	0.921	0.867	0.872	0.857	0.830	0.706	0.852	0.818	0.413	0.466	0.681
CIFG16B15F42	*Sony Demo*	0.729	0.910	0.874	0.864	0.837	0.808	0.643	0.811	0.786	0.356	0.447	0.644
CIFG16B15F48	*Sony Demo*	0.739	0.915	0.867	0.842	0.820	0.776	0.653	0.704	0.581	0.511	0.625	0.839
CIFG16B15F10	*Silence of the Lambs*	0.967	0.903	0.891	0.906	0.885	0.888	0.895	0.946	0.948	0.923	0.911	0.913
CIFG16B15F16	*Silence of the Lambs*	0.943	0.887	0.876	0.875	0.865	0.870	0.894	0.932	0.909	0.889	0.869	0.886
CIFG16B15F22	*Silence of the Lambs*	0.915	0.877	0.867	0.868	0.853	0.858	0.882	0.913	0.874	0.852	0.825	0.853
CIFG16B15F24	*Silence of the Lambs*	0.906	0.875	0.866	0.868	0.853	0.853	0.872	0.906	0.862	0.840	0.814	0.847
CIFG16B15F28	*Silence of the Lambs*	0.890	0.875	0.861	0.864	0.847	0.843	0.852	0.889	0.849	0.827	0.806	0.842
CIFG16B15F34	*Silence of the Lambs*	0.867	0.872	0.854	0.850	0.843	0.831	0.837	0.885	0.850	0.838	0.831	0.855
CIFG16B15F38	*Silence of the Lambs*	0.855	0.870	0.855	0.854	0.848	0.832	0.838	0.887	0.865	0.851	0.861	0.867
CIFG16B15F42	*Silence of the Lambs*	0.842	0.860	0.848	0.847	0.847	0.837	0.843	0.884	0.880	0.868	0.892	0.889
CIFG16B15F48	*Silence of the Lambs*	0.779	0.827	0.824	0.822	0.820	0.823	0.852	0.913	0.874	0.942	0.924	0.921
CIFG16B15F10	*Star Wars 4*	0.931	0.867	0.869	0.877	0.860	0.875	0.849	0.876	0.851	0.919	0.941	0.874
CIFG16B15F16	*Star Wars 4*	0.914	0.866	0.867	0.886	0.872	0.890	0.874	0.912	0.883	0.969	1.042	0.955
CIFG16B15F22	*Star Wars 4*	0.895	0.856	0.861	0.885	0.875	0.898	0.875	0.918	0.893	0.967	1.050	0.981
CIFG16B15F24	*Star Wars 4*	0.890	0.852	0.859	0.883	0.877	0.903	0.879	0.922	0.899	0.965	1.051	0.982
CIFG16B15F28	*Star Wars 4*	0.879	0.851	0.859	0.886	0.881	0.909	0.889	0.927	0.906	0.962	1.051	0.974
CIFG16B15F34	*Star Wars 4*	0.854	0.853	0.852	0.885	0.882	0.909	0.903	0.930	0.909	0.973	1.072	0.981
CIFG16B15F38	*Star Wars 4*	0.847	0.847	0.848	0.878	0.875	0.899	0.901	0.934	0.910	0.980	1.083	1.013
CIFG16B15F42	*Star Wars 4*	0.828	0.839	0.842	0.865	0.863	0.885	0.900	0.929	0.926	0.983	1.094	1.041
CIFG16B15F48	*Star Wars 4*	0.802	0.844	0.845	0.858	0.864	0.898	0.908	0.941	0.971	0.990	1.071	1.039
CIFG16B15F10	*Tokyo Olympics*	0.953	0.894	0.881	0.862	0.841	0.834	0.847	0.836	0.836	0.834	0.865	0.825
CIFG16B15F16	*Tokyo Olympics*	0.951	0.893	0.887	0.859	0.857	0.855	0.872	0.861	0.865	0.864	0.904	0.869
CIFG16B15F22	*Tokyo Olympics*	0.930	0.876	0.872	0.854	0.859	0.874	0.884	0.874	0.877	0.881	0.923	0.898
CIFG16B15F24	*Tokyo Olympics*	0.923	0.874	0.872	0.853	0.859	0.873	0.886	0.875	0.878	0.887	0.922	0.896
CIFG16B15F28	*Tokyo Olympics*	0.910	0.870	0.870	0.850	0.853	0.868	0.887	0.877	0.876	0.888	0.920	0.887
CIFG16B15F34	*Tokyo Olympics*	0.890	0.874	0.872	0.848	0.848	0.861	0.888	0.878	0.874	0.881	0.912	0.876
CIFG16B15F38	*Tokyo Olympics*	0.878	0.873	0.867	0.848	0.849	0.863	0.889	0.881	0.875	0.879	0.899	0.866
CIFG16B15F42	*Tokyo Olympics*	0.862	0.868	0.863	0.842	0.850	0.870	0.890	0.892	0.868	0.867	0.882	0.844
CIFG16B15F48	*Tokyo Olympics*	0.841	0.863	0.849	0.823	0.830	0.846	0.873	0.841	0.831	0.860	0.875	0.815
CIFG16B15F10	*NBC 12 News*	0.929	0.863	0.868	0.889	0.884	0.880	0.853	0.862	0.839	0.868	0.821	0.780
CIFG16B15F16	*NBC 12 News*	0.926	0.861	0.868	0.887	0.878	0.859	0.829	0.845	0.804	0.785	0.783	0.730
CIFG16B15F22	*NBC 12 News*	0.891	0.831	0.828	0.839	0.824	0.792	0.757	0.771	0.737	0.728	0.763	0.648
CIFG16B15F24	*NBC 12 News*	0.868	0.821	0.817	0.819	0.802	0.766	0.748	0.745	0.719	0.726	0.733	0.603
CIFG16B15F28	*NBC 12 News*	0.832	0.808	0.808	0.809	0.787	0.749	0.759	0.739	0.709	0.750	0.730	0.605
CIFG16B15F34	*NBC 12 News*	0.784	0.801	0.809	0.806	0.781	0.753	0.794	0.762	0.695	0.761	0.751	0.641
CIFG16B15F38	*NBC 12 News*	0.763	0.794	0.803	0.792	0.771	0.749	0.805	0.783	0.672	0.767	0.727	0.671

TABLE XLII: *continued*

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B15F42	*NBC 12 News*	0.738	0.791	0.789	0.780	0.751	0.733	0.802	0.781	0.674	0.762	0.719	0.674
CIFG16B15F48	*NBC 12 News*	0.708	0.787	0.774	0.751	0.730	0.723	0.794	0.720	0.727	0.748	0.708	0.716

TABLE XLIII: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG12B2F10	*Sony Demo*	0.953	0.869	0.820	0.798	0.780	0.795	0.786	0.856	0.710	0.676	0.594	0.668
CIFG12B2F16	*Sony Demo*	0.913	0.886	0.844	0.823	0.810	0.841	0.812	0.840	0.732	0.638	0.592	0.651
CIFG12B2F22	*Sony Demo*	0.846	0.904	0.881	0.857	0.834	0.846	0.746	0.820	0.691	0.503	0.534	0.646
CIFG12B2F24	*Sony Demo*	0.824	0.908	0.887	0.858	0.835	0.850	0.723	0.829	0.672	0.462	0.518	0.645
CIFG12B2F28	*Sony Demo*	0.793	0.916	0.889	0.866	0.846	0.838	0.699	0.836	0.682	0.446	0.537	0.678
CIFG12B2F34	*Sony Demo*	0.762	0.929	0.899	0.879	0.856	0.837	0.667	0.870	0.630	0.370	0.606	0.686
CIFG12B2F38	*Sony Demo*	0.759	0.936	0.902	0.886	0.880	0.847	0.692	0.867	0.618	0.291	0.567	0.676
CIFG12B2F42	*Sony Demo*	0.759	0.938	0.896	0.877	0.862	0.821	0.667	0.814	0.489	0.313	0.584	0.731
CIFG12B2F48	*Sony Demo*	0.757	0.930	0.876	0.847	0.829	0.755	0.627	0.702	0.451	0.487	0.674	0.922
CIFG12B2F10	*Silence of the Lambs*	0.964	0.931	0.932	0.930	0.906	0.921	0.853	0.948	0.904	0.865	0.936	0.917
CIFG12B2F16	*Silence of the Lambs*	0.930	0.918	0.915	0.910	0.887	0.889	0.847	0.939	0.875	0.851	0.927	0.891
CIFG12B2F22	*Silence of the Lambs*	0.900	0.907	0.898	0.898	0.877	0.869	0.839	0.930	0.852	0.825	0.901	0.867
CIFG12B2F24	*Silence of the Lambs*	0.887	0.904	0.895	0.893	0.873	0.865	0.837	0.929	0.845	0.818	0.892	0.864
CIFG12B2F28	*Silence of the Lambs*	0.868	0.901	0.892	0.885	0.868	0.857	0.839	0.922	0.840	0.817	0.883	0.861
CIFG12B2F34	*Silence of the Lambs*	0.854	0.889	0.883	0.875	0.867	0.857	0.851	0.911	0.849	0.838	0.891	0.864
CIFG12B2F38	*Silence of the Lambs*	0.842	0.883	0.877	0.866	0.864	0.851	0.854	0.915	0.857	0.852	0.899	0.869
CIFG12B2F42	*Silence of the Lambs*	0.834	0.877	0.871	0.862	0.863	0.852	0.857	0.924	0.866	0.872	0.908	0.878
CIFG12B2F48	*Silence of the Lambs*	0.803	0.857	0.855	0.850	0.853	0.844	0.859	0.933	0.866	0.884	0.924	0.903
720pG12B2FxT10	*Sony Demo*	0.948	0.921	0.865	0.828	0.810	0.824	0.980	0.854	0.771	0.795	0.761	0.819
720pG12B2FxT22	*Sony Demo*	0.944	0.937	0.902	0.886	0.887	0.875	0.924	0.859	0.751	0.703	0.692	0.695
720pG12B2FxT28	*Sony Demo*	0.869	0.934	0.901	0.874	0.904	0.884	0.864	0.879	0.760	0.672	0.657	0.619
720pG12B2FxT34	*Sony Demo*	0.815	0.936	0.912	0.885	0.876	0.873	0.795	0.850	0.752	0.612	0.606	0.648
720pG12B2FxT38	*Sony Demo*	0.786	0.933	0.908	0.882	0.866	0.880	0.812	0.883	0.689	0.534	0.558	0.676
720pG12B2FxT42	*Sony Demo*	0.771	0.934	0.898	0.869	0.854	0.833	0.668	0.851	0.656	0.422	0.537	0.606
720pG12B2FxT48	*Sony Demo*	0.764	0.921	0.882	0.856	0.844	0.816	0.647	0.814	0.641	0.260	0.450	0.560
720pG12B2FxT10	*Terminator 2*	1.002	0.852	0.844	0.849	0.859	0.861	0.892	0.713	0.666	0.580	0.691	0.767
720pG12B2FxT22	*Terminator 2*	0.956	0.871	0.846	0.827	0.812	0.811	0.898	0.916	0.859	0.901	0.872	1.002
720pG12B2FxT28	*Terminator 2*	0.923	0.876	0.837	0.796	0.754	0.738	0.811	0.851	0.836	0.990	1.032	1.103
720pG12B2FxT34	*Terminator 2*	0.890	0.838	0.806	0.748	0.690	0.660	0.742	0.834	0.838	0.896	0.994	1.154
720pG12B2FxT38	*Terminator 2*	0.873	0.823	0.795	0.738	0.689	0.641	0.714	0.840	0.881	0.757	0.891	0.990
720pG12B2FxT42	*Terminator 2*	0.861	0.819	0.791	0.752	0.708	0.646	0.676	0.765	0.880	0.593	0.656	0.689
720pG12B2FxT48	*Terminator 2*	0.846	0.826	0.807	0.791	0.736	0.679	0.661	0.733	0.965	0.603	0.398	0.179

TABLE XLIV: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B1F10	*Sony Demo*	0.756
CIFG16B1F16	*Sony Demo*	0.722
CIFG16B1F22	*Sony Demo*	0.698
CIFG16B1F24	*Sony Demo*	0.693
CIFG16B1F28	*Sony Demo*	0.686
CIFG16B1F34	*Sony Demo*	0.701
CIFG16B1F38	*Sony Demo*	0.713
CIFG16B1F42	*Sony Demo*	0.726
CIFG16B1F48	*Sony Demo*	0.770
CIFG16B1F10	*Silence of the Lambs*	0.821
CIFG16B1F16	*Silence of the Lambs*	0.828
CIFG16B1F22	*Silence of the Lambs*	0.821
CIFG16B1F24	*Silence of the Lambs*	0.818
CIFG16B1F28	*Silence of the Lambs*	0.814
CIFG16B1F34	*Silence of the Lambs*	0.818
CIFG16B1F38	*Silence of the Lambs*	0.828
CIFG16B1F42	*Silence of the Lambs*	0.837
CIFG16B1F48	*Silence of the Lambs*	0.834
CIFG16B1F10	*Star Wars 4*	0.341
CIFG16B1F16	*Star Wars 4*	0.489
CIFG16B1F22	*Star Wars 4*	0.558

TABLE XLIV: *continued*

Enc. M.	Video	VT H
CIFG16B1F24	*Star Wars 4*	0.565
CIFG16B1F28	*Star Wars 4*	0.578
CIFG16B1F34	*Star Wars 4*	0.601
CIFG16B1F38	*Star Wars 4*	0.633
CIFG16B1F42	*Star Wars 4*	0.664
CIFG16B1F48	*Star Wars 4*	0.693
CIFG16B1F10	*Tokyo Olympics*	0.803
CIFG16B1F16	*Tokyo Olympics*	0.826
CIFG16B1F22	*Tokyo Olympics*	0.845
CIFG16B1F24	*Tokyo Olympics*	0.845
CIFG16B1F28	*Tokyo Olympics*	0.845
CIFG16B1F34	*Tokyo Olympics*	0.843
CIFG16B1F38	*Tokyo Olympics*	0.843
CIFG16B1F42	*Tokyo Olympics*	0.843
CIFG16B1F48	*Tokyo Olympics*	0.832
CIFG16B1F10	*NBC 12 News*	0.483
CIFG16B1F16	*NBC 12 News*	0.468
CIFG16B1F22	*NBC 12 News*	0.527
CIFG16B1F24	*NBC 12 News*	0.550
CIFG16B1F28	*NBC 12 News*	0.577
CIFG16B1F34	*NBC 12 News*	0.593
CIFG16B1F38	*NBC 12 News*	0.590
CIFG16B1F42	*NBC 12 News*	0.585
CIFG16B1F48	*NBC 12 News*	0.624

TABLE XLV: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B3F10	*Sony Demo*	0.752
CIFG16B3F16	*Sony Demo*	0.706
CIFG16B3F22	*Sony Demo*	0.694
CIFG16B3F24	*Sony Demo*	0.700
CIFG16B3F28	*Sony Demo*	0.710
CIFG16B3F34	*Sony Demo*	0.706
CIFG16B3F38	*Sony Demo*	0.704
CIFG16B3F42	*Sony Demo*	0.713
CIFG16B3F48	*Sony Demo*	0.755
CIFG16B3F10	*Silence of the Lambs*	0.822
CIFG16B3F16	*Silence of the Lambs*	0.821
CIFG16B3F22	*Silence of the Lambs*	0.809
CIFG16B3F24	*Silence of the Lambs*	0.807
CIFG16B3F28	*Silence of the Lambs*	0.807
CIFG16B3F34	*Silence of the Lambs*	0.819
CIFG16B3F38	*Silence of the Lambs*	0.831
CIFG16B3F42	*Silence of the Lambs*	0.846
CIFG16B3F48	*Silence of the Lambs*	0.851
CIFG16B3F10	*Star Wars 4*	0.442
CIFG16B3F16	*Star Wars 4*	0.542
CIFG16B3F22	*Star Wars 4*	0.574
CIFG16B3F24	*Star Wars 4*	0.569
CIFG16B3F28	*Star Wars 4*	0.568
CIFG16B3F34	*Star Wars 4*	0.604
CIFG16B3F38	*Star Wars 4*	0.645
CIFG16B3F42	*Star Wars 4*	0.679
CIFG16B3F48	*Star Wars 4*	0.693
CIFG16B3F10	*Tokyo Olympics*	0.805
CIFG16B3F16	*Tokyo Olympics*	0.831
CIFG16B3F22	*Tokyo Olympics*	0.844
CIFG16B3F24	*Tokyo Olympics*	0.843
CIFG16B3F28	*Tokyo Olympics*	0.842
CIFG16B3F34	*Tokyo Olympics*	0.842
CIFG16B3F38	*Tokyo Olympics*	0.842
CIFG16B3F42	*Tokyo Olympics*	0.844
CIFG16B3F48	*Tokyo Olympics*	0.841
CIFG16B3F10	*NBC 12 News*	0.451
CIFG16B3F16	*NBC 12 News*	0.456
CIFG16B3F22	*NBC 12 News*	0.550

TABLE XLV: *continued*

Enc. M.	Video	VT H
CIFG16B3F24	*NBC 12 News*	0.568
CIFG16B3F28	*NBC 12 News*	0.589
CIFG16B3F34	*NBC 12 News*	0.590
CIFG16B3F38	*NBC 12 News*	0.571
CIFG16B3F42	*NBC 12 News*	0.544
CIFG16B3F48	*NBC 12 News*	0.609

TABLE XLVI: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B7F10	*Sony Demo*	0.746
CIFG16B7F16	*Sony Demo*	0.699
CIFG16B7F22	*Sony Demo*	0.691
CIFG16B7F24	*Sony Demo*	0.702
CIFG16B7F28	*Sony Demo*	0.738
CIFG16B7F34	*Sony Demo*	0.741
CIFG16B7F38	*Sony Demo*	0.727
CIFG16B7F42	*Sony Demo*	0.720
CIFG16B7F48	*Sony Demo*	0.748
CIFG16B7F10	*Silence of the Lambs*	0.823
CIFG16B7F16	*Silence of the Lambs*	0.818
CIFG16B7F22	*Silence of the Lambs*	0.802
CIFG16B7F24	*Silence of the Lambs*	0.798
CIFG16B7F28	*Silence of the Lambs*	0.798
CIFG16B7F34	*Silence of the Lambs*	0.814
CIFG16B7F38	*Silence of the Lambs*	0.828
CIFG16B7F42	*Silence of the Lambs*	0.844
CIFG16B7F48	*Silence of the Lambs*	0.861
CIFG16B7F10	*Star Wars 4*	0.463
CIFG16B7F16	*Star Wars 4*	0.567
CIFG16B7F22	*Star Wars 4*	0.589
CIFG16B7F24	*Star Wars 4*	0.582
CIFG16B7F28	*Star Wars 4*	0.572
CIFG16B7F34	*Star Wars 4*	0.607
CIFG16B7F38	*Star Wars 4*	0.651
CIFG16B7F42	*Star Wars 4*	0.687
CIFG16B7F48	*Star Wars 4*	0.711
CIFG16B7F10	*Tokyo Olympics*	0.806
CIFG16B7F16	*Tokyo Olympics*	0.830
CIFG16B7F22	*Tokyo Olympics*	0.842
CIFG16B7F24	*Tokyo Olympics*	0.840
CIFG16B7F28	*Tokyo Olympics*	0.837
CIFG16B7F34	*Tokyo Olympics*	0.839
CIFG16B7F38	*Tokyo Olympics*	0.841
CIFG16B7F42	*Tokyo Olympics*	0.844
CIFG16B7F48	*Tokyo Olympics*	0.847
CIFG16B7F10	*NBC 12 News*	0.443
CIFG16B7F16	*NBC 12 News*	0.441
CIFG16B7F22	*NBC 12 News*	0.551
CIFG16B7F24	*NBC 12 News*	0.568
CIFG16B7F28	*NBC 12 News*	0.593
CIFG16B7F34	*NBC 12 News*	0.597
CIFG16B7F38	*NBC 12 News*	0.580
CIFG16B7F42	*NBC 12 News*	0.549
CIFG16B7F48	*NBC 12 News*	0.623

TABLE XLVII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B15F10	*Sony Demo*	0.747
CIFG16B15F16	*Sony Demo*	0.699
CIFG16B15F22	*Sony Demo*	0.685
CIFG16B15F24	*Sony Demo*	0.687
CIFG16B15F28	*Sony Demo*	0.719

TABLE XLVII: *continued*

Enc. M.	Video	VT H
CIFG16B15F34	*Sony Demo*	0.756
CIFG16B15F38	*Sony Demo*	0.750
CIFG16B15F42	*Sony Demo*	0.738
CIFG16B15F48	*Sony Demo*	0.745
CIFG16B15F10	*Silence of the Lambs*	0.821
CIFG16B15F16	*Silence of the Lambs*	0.816
CIFG16B15F22	*Silence of the Lambs*	0.800
CIFG16B15F24	*Silence of the Lambs*	0.796
CIFG16B15F28	*Silence of the Lambs*	0.795
CIFG16B15F34	*Silence of the Lambs*	0.809
CIFG16B15F38	*Silence of the Lambs*	0.822
CIFG16B15F42	*Silence of the Lambs*	0.837
CIFG16B15F48	*Silence of the Lambs*	0.854
CIFG16B15F10	*Star Wars 4*	0.453
CIFG16B15F16	*Star Wars 4*	0.570
CIFG16B15F22	*Star Wars 4*	0.597
CIFG16B15F24	*Star Wars 4*	0.595
CIFG16B15F28	*Star Wars 4*	0.592
CIFG16B15F34	*Star Wars 4*	0.622
CIFG16B15F38	*Star Wars 4*	0.662
CIFG16B15F42	*Star Wars 4*	0.697
CIFG16B15F48	*Star Wars 4*	0.731
CIFG16B15F10	*Tokyo Olympics*	0.806
CIFG16B15F16	*Tokyo Olympics*	0.827
CIFG16B15F22	*Tokyo Olympics*	0.839
CIFG16B15F24	*Tokyo Olympics*	0.837
CIFG16B15F28	*Tokyo Olympics*	0.834
CIFG16B15F34	*Tokyo Olympics*	0.836
CIFG16B15F38	*Tokyo Olympics*	0.840
CIFG16B15F42	*Tokyo Olympics*	0.843
CIFG16B15F48	*Tokyo Olympics*	0.848
CIFG16B15F10	*NBC 12 News*	0.437
CIFG16B15F16	*NBC 12 News*	0.409
CIFG16B15F22	*NBC 12 News*	0.523
CIFG16B15F24	*NBC 12 News*	0.538
CIFG16B15F28	*NBC 12 News*	0.565
CIFG16B15F34	*NBC 12 News*	0.576
CIFG16B15F38	*NBC 12 News*	0.565
CIFG16B15F42	*NBC 12 News*	0.560
CIFG16B15F48	*NBC 12 News*	0.622

TABLE XLVIII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG12B2F10	*Sony Demo*	0.496
CIFG12B2F16	*Sony Demo*	0.539
CIFG12B2F22	*Sony Demo*	0.581
CIFG12B2F24	*Sony Demo*	0.585
CIFG12B2F28	*Sony Demo*	0.588
CIFG12B2F34	*Sony Demo*	0.588
CIFG12B2F38	*Sony Demo*	0.584
CIFG12B2F42	*Sony Demo*	0.596
CIFG12B2F48	*Sony Demo*	0.658
CIFG12B2F10	*Silence of the Lambs*	0.878
CIFG12B2F16	*Silence of the Lambs*	0.881
CIFG12B2F22	*Silence of the Lambs*	0.871
CIFG12B2F24	*Silence of the Lambs*	0.867
CIFG12B2F28	*Silence of the Lambs*	0.860
CIFG12B2F34	*Silence of the Lambs*	0.852
CIFG12B2F38	*Silence of the Lambs*	0.850
CIFG12B2F42	*Silence of the Lambs*	0.846
CIFG12B2F48	*Silence of the Lambs*	0.829
720pG12B2FxT10	*Sony Demo*	0.545
720pG12B2FxT22	*Sony Demo*	0.500
720pG12B2FxT28	*Sony Demo*	0.549
720pG12B2FxT34	*Sony Demo*	0.583
720pG12B2FxT38	*Sony Demo*	0.663

TABLE XLVIII: *continued*

Enc. M.	Video	VT H
720pG12B2FxT42	*Sony Demo*	0.590
720pG12B2FxT48	*Sony Demo*	0.591
720pG12B2FxT10	*Terminator 2*	0.690
720pG12B2FxT22	*Terminator 2*	0.743
720pG12B2FxT28	*Terminator 2*	0.685
720pG12B2FxT34	*Terminator 2*	0.587
720pG12B2FxT38	*Terminator 2*	0.490
720pG12B2FxT42	*Terminator 2*	0.335
720pG12B2FxT48	*Terminator 2*	0.289

TABLE XLIX: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B1F10	*Sony Demo*	1.276	1.386	1.354	1.230	1.474	1.227	1.299	1.079	1.065	1.278	1.050
CIFG16B1F16	*Sony Demo*	1.209	1.336	1.350	1.297	1.444	1.256	1.330	1.109	1.145	1.117	1.232
CIFG16B1F22	*Sony Demo*	1.164	1.275	1.340	1.324	1.451	1.285	1.257	1.122	1.257	1.317	1.375
CIFG16B1F24	*Sony Demo*	1.137	1.250	1.334	1.342	1.465	1.274	1.227	1.132	1.327	1.490	1.435
CIFG16B1F28	*Sony Demo*	1.105	1.211	1.331	1.395	1.510	1.260	1.199	1.147	1.397	1.579	1.557
CIFG16B1F34	*Sony Demo*	1.086	1.139	1.218	1.254	1.476	1.266	1.238	1.158	1.552	1.740	1.708
CIFG16B1F38	*Sony Demo*	1.091	1.152	1.253	1.349	1.466	1.293	1.244	1.133	1.580	1.679	1.577
CIFG16B1F42	*Sony Demo*	1.126	1.174	1.261	1.375	1.446	1.339	1.253	1.066	1.251	1.547	1.258
CIFG16B1F48	*Sony Demo*	1.179	1.225	1.346	1.374	1.478	1.365	1.262	0.977	0.977	1.258	0.963
CIFG16B1F10	*Silence of the Lambs*	1.192	1.089	0.908	1.066	1.087	1.082	1.021	0.987	1.031	1.056	1.191
CIFG16B1F16	*Silence of the Lambs*	1.160	1.132	1.002	1.058	1.080	1.062	0.985	0.999	1.030	1.073	1.280
CIFG16B1F22	*Silence of the Lambs*	1.170	1.147	1.047	1.058	1.069	1.052	0.960	0.985	1.026	1.060	1.304
CIFG16B1F24	*Silence of the Lambs*	1.170	1.143	1.056	1.061	1.070	1.051	0.956	0.976	1.023	1.061	1.301
CIFG16B1F28	*Silence of the Lambs*	1.168	1.149	1.078	1.060	1.074	1.043	0.947	0.954	1.011	1.045	1.309
CIFG16B1F34	*Silence of the Lambs*	1.157	1.166	1.096	1.060	1.061	1.022	0.941	0.947	0.986	1.024	1.265
CIFG16B1F38	*Silence of the Lambs*	1.132	1.173	1.105	1.047	1.066	1.017	0.933	0.930	0.974	1.026	1.227
CIFG16B1F42	*Silence of the Lambs*	1.096	1.154	1.114	1.035	1.054	1.012	0.932	0.910	0.960	1.028	1.189
CIFG16B1F48	*Silence of the Lambs*	1.059	1.132	1.092	0.998	1.033	0.999	0.914	0.871	0.961	1.008	1.224
CIFG16B1F10	*Star Wars 4*	1.140	1.007	0.965	0.883	0.950	0.953	0.930	0.992	0.916	0.868	0.690
CIFG16B1F16	*Star Wars 4*	1.120	1.040	0.990	0.929	0.932	0.981	0.931	1.001	0.994	0.974	0.772
CIFG16B1F22	*Star Wars 4*	1.121	1.059	1.009	0.957	0.931	0.987	0.919	0.991	1.000	0.945	0.825
CIFG16B1F24	*Star Wars 4*	1.121	1.068	1.021	0.961	0.929	0.990	0.917	0.997	0.998	0.937	0.813
CIFG16B1F28	*Star Wars 4*	1.123	1.082	1.040	0.969	0.928	0.998	0.920	0.995	0.977	0.909	0.806
CIFG16B1F34	*Star Wars 4*	1.110	1.083	1.047	0.973	0.932	0.980	0.911	1.009	0.961	0.856	0.778
CIFG16B1F38	*Star Wars 4*	1.087	1.078	1.044	0.972	0.919	0.974	0.901	1.006	0.948	0.829	0.766
CIFG16B1F42	*Star Wars 4*	1.062	1.072	1.046	0.978	0.916	0.974	0.866	1.025	0.936	0.821	0.781
CIFG16B1F48	*Star Wars 4*	1.015	1.041	1.022	0.972	0.920	0.974	0.855	0.966	0.938	0.822	0.841
CIFG16B1F10	*Tokyo Olympics*	1.229	1.208	1.197	1.146	1.060	1.014	1.058	1.024	1.127	1.115	1.111
CIFG16B1F16	*Tokyo Olympics*	1.219	1.215	1.198	1.137	1.066	0.986	1.030	1.062	1.122	1.086	1.055
CIFG16B1F22	*Tokyo Olympics*	1.207	1.210	1.179	1.104	1.039	0.962	0.989	1.014	1.011	0.959	0.937
CIFG16B1F24	*Tokyo Olympics*	1.203	1.208	1.172	1.092	1.030	0.959	0.983	1.004	0.995	0.947	0.920
CIFG16B1F28	*Tokyo Olympics*	1.194	1.199	1.163	1.076	1.021	0.962	0.975	0.996	0.975	0.927	0.922
CIFG16B1F34	*Tokyo Olympics*	1.184	1.180	1.136	1.058	1.014	0.966	0.964	0.998	0.937	0.895	0.903
CIFG16B1F38	*Tokyo Olympics*	1.176	1.171	1.116	1.051	1.004	0.968	0.951	0.991	0.917	0.869	0.886
CIFG16B1F42	*Tokyo Olympics*	1.166	1.156	1.100	1.051	1.002	0.961	0.945	0.987	0.916	0.865	0.874
CIFG16B1F48	*Tokyo Olympics*	1.122	1.129	1.065	1.016	0.995	0.953	0.912	0.982	0.924	0.858	0.855
CIFG16B1F10	*NBC 12 News*	1.054	1.088	1.023	1.040	0.936	0.995	0.895	0.840	0.783	0.844	1.286
CIFG16B1F16	*NBC 12 News*	1.072	1.097	1.028	1.041	0.937	1.008	0.880	0.806	0.727	0.850	1.193
CIFG16B1F22	*NBC 12 News*	1.030	1.054	1.001	1.009	0.915	0.956	0.873	0.826	0.716	0.890	1.121
CIFG16B1F24	*NBC 12 News*	1.001	1.033	0.990	0.989	0.897	0.947	0.870	0.826	0.709	0.911	1.119
CIFG16B1F28	*NBC 12 News*	0.968	1.005	0.964	0.962	0.879	0.965	0.874	0.832	0.722	0.940	1.092
CIFG16B1F34	*NBC 12 News*	0.936	0.967	0.941	0.942	0.888	0.934	0.877	0.853	0.777	0.927	1.090
CIFG16B1F38	*NBC 12 News*	0.921	0.954	0.931	0.934	0.896	0.933	0.875	0.898	0.828	0.883	1.085
CIFG16B1F42	*NBC 12 News*	0.907	0.945	0.922	0.931	0.905	0.932	0.870	0.974	0.896	0.850	1.054
CIFG16B1F48	*NBC 12 News*	0.903	0.935	0.887	0.925	0.934	0.879	0.866	1.046	1.023	0.859	1.029

TABLE L: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3F10	*Sony Demo*	1.276	1.382	1.348	1.257	1.457	1.231	1.259	1.081	1.006	1.060	1.059

TABLE L: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B3F16	*Sony Demo*	1.221	1.326	1.343	1.308	1.444	1.258	1.244	1.101	1.130	1.197	1.226
CIFG16B3F22	*Sony Demo*	1.131	1.273	1.358	1.329	1.492	1.299	1.250	1.134	1.271	1.601	1.340
CIFG16B3F24	*Sony Demo*	1.108	1.250	1.357	1.331	1.529	1.265	1.220	1.149	1.311	1.629	1.381
CIFG16B3F28	*Sony Demo*	1.088	1.215	1.338	1.357	1.504	1.241	1.185	1.164	1.419	1.828	1.465
CIFG16B3F34	*Sony Demo*	1.066	1.148	1.252	1.304	1.459	1.261	1.187	1.148	1.496	1.646	1.698
CIFG16B3F38	*Sony Demo*	1.112	1.183	1.287	1.404	1.481	1.293	1.228	1.100	1.438	1.636	1.546
CIFG16B3F42	*Sony Demo*	1.149	1.201	1.310	1.388	1.458	1.346	1.229	1.022	1.168	1.501	1.204
CIFG16B3F48	*Sony Demo*	1.182	1.248	1.353	1.342	1.532	1.408	1.240	0.998	0.981	1.223	0.915
CIFG16B3F10	*Silence of the Lambs*	1.185	1.098	0.933	1.068	1.100	1.081	1.018	0.995	1.047	1.053	1.175
CIFG16B3F16	*Silence of the Lambs*	1.161	1.133	1.013	1.062	1.075	1.055	0.976	1.001	1.043	1.056	1.257
CIFG16B3F22	*Silence of the Lambs*	1.174	1.158	1.051	1.050	1.065	1.050	0.958	0.991	1.041	1.056	1.264
CIFG16B3F24	*Silence of the Lambs*	1.169	1.161	1.061	1.054	1.067	1.046	0.953	0.983	1.038	1.051	1.274
CIFG16B3F28	*Silence of the Lambs*	1.160	1.167	1.080	1.056	1.074	1.034	0.949	0.966	1.021	1.034	1.311
CIFG16B3F34	*Silence of the Lambs*	1.152	1.179	1.100	1.052	1.067	1.017	0.938	0.946	0.989	1.018	1.280
CIFG16B3F38	*Silence of the Lambs*	1.133	1.190	1.113	1.036	1.060	1.019	0.941	0.936	0.982	1.024	1.216
CIFG16B3F42	*Silence of the Lambs*	1.094	1.162	1.126	1.023	1.053	1.033	0.930	0.906	0.963	1.039	1.198
CIFG16B3F48	*Silence of the Lambs*	1.039	1.126	1.087	0.990	1.015	0.986	0.890	0.850	0.965	1.023	1.117
CIFG16B3F10	*Star Wars 4*	1.139	1.006	0.973	0.892	0.943	0.954	0.941	0.978	0.925	0.898	0.690
CIFG16B3F16	*Star Wars 4*	1.126	1.044	0.996	0.924	0.932	0.971	0.915	0.988	0.978	0.957	0.767
CIFG16B3F22	*Star Wars 4*	1.124	1.062	1.015	0.949	0.930	0.977	0.913	1.005	0.987	0.939	0.813
CIFG16B3F24	*Star Wars 4*	1.124	1.070	1.025	0.957	0.928	0.976	0.915	1.016	0.979	0.929	0.814
CIFG16B3F28	*Star Wars 4*	1.123	1.081	1.046	0.964	0.925	0.987	0.920	1.004	0.965	0.900	0.847
CIFG16B3F34	*Star Wars 4*	1.107	1.086	1.054	0.968	0.939	0.984	0.907	1.008	0.944	0.850	0.777
CIFG16B3F38	*Star Wars 4*	1.087	1.086	1.050	0.969	0.932	0.984	0.894	0.991	0.935	0.821	0.764
CIFG16B3F42	*Star Wars 4*	1.059	1.083	1.054	0.982	0.927	0.991	0.879	1.002	0.935	0.820	0.773
CIFG16B3F48	*Star Wars 4*	0.982	1.030	1.013	0.979	0.930	0.999	0.870	0.965	0.949	0.827	0.844
CIFG16B3F10	*Tokyo Olympics*	1.230	1.207	1.199	1.148	1.060	1.031	1.075	1.036	1.126	1.123	1.103
CIFG16B3F16	*Tokyo Olympics*	1.215	1.216	1.187	1.128	1.075	0.980	1.013	1.052	1.091	1.061	1.016
CIFG16B3F22	*Tokyo Olympics*	1.205	1.206	1.161	1.086	1.033	0.964	0.989	1.019	0.995	0.960	0.937
CIFG16B3F24	*Tokyo Olympics*	1.203	1.199	1.157	1.077	1.025	0.961	0.979	1.017	0.982	0.945	0.932
CIFG16B3F28	*Tokyo Olympics*	1.195	1.186	1.145	1.064	1.015	0.962	0.976	1.015	0.966	0.922	0.921
CIFG16B3F34	*Tokyo Olympics*	1.186	1.174	1.120	1.053	1.006	0.966	0.968	1.004	0.943	0.892	0.893
CIFG16B3F38	*Tokyo Olympics*	1.177	1.168	1.101	1.045	0.993	0.965	0.953	0.996	0.920	0.860	0.878
CIFG16B3F42	*Tokyo Olympics*	1.156	1.151	1.093	1.039	0.990	0.952	0.946	0.993	0.919	0.857	0.870
CIFG16B3F48	*Tokyo Olympics*	1.111	1.120	1.057	1.011	0.990	0.955	0.934	0.985	0.928	0.865	0.873
CIFG16B3F10	*NBC 12 News*	1.069	1.089	1.020	1.016	0.926	0.994	0.868	0.803	0.766	0.849	1.213
CIFG16B3F16	*NBC 12 News*	1.081	1.089	1.022	1.013	0.926	0.998	0.868	0.794	0.717	0.857	1.132
CIFG16B3F22	*NBC 12 News*	1.026	1.042	0.998	0.983	0.896	0.940	0.874	0.833	0.712	0.910	1.095
CIFG16B3F24	*NBC 12 News*	0.998	1.027	0.985	0.974	0.877	0.939	0.876	0.838	0.704	0.923	1.094
CIFG16B3F28	*NBC 12 News*	0.957	0.998	0.958	0.954	0.867	0.935	0.886	0.852	0.734	0.946	1.082
CIFG16B3F34	*NBC 12 News*	0.922	0.971	0.930	0.933	0.885	0.915	0.884	0.871	0.801	0.919	1.122
CIFG16B3F38	*NBC 12 News*	0.913	0.958	0.922	0.925	0.887	0.900	0.875	0.907	0.854	0.857	1.136
CIFG16B3F42	*NBC 12 News*	0.910	0.951	0.915	0.925	0.901	0.899	0.851	0.964	0.932	0.809	1.124
CIFG16B3F48	*NBC 12 News*	0.901	0.938	0.875	0.941	0.939	0.847	0.866	1.031	1.067	0.854	1.001

TABLE LI: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B7F10	*Sony Demo*	1.236	1.341	1.335	1.241	1.454	1.258	1.340	1.094	1.028	0.987	1.101
CIFG16B7F16	*Sony Demo*	1.197	1.308	1.347	1.295	1.416	1.281	1.306	1.105	1.183	1.160	1.254
CIFG16B7F22	*Sony Demo*	1.136	1.241	1.329	1.302	1.508	1.294	1.261	1.156	1.338	1.591	1.428
CIFG16B7F24	*Sony Demo*	1.117	1.233	1.319	1.314	1.524	1.285	1.258	1.172	1.381	1.615	1.469
CIFG16B7F28	*Sony Demo*	1.098	1.197	1.298	1.341	1.529	1.272	1.264	1.187	1.540	1.691	1.542
CIFG16B7F34	*Sony Demo*	1.123	1.198	1.281	1.370	1.471	1.346	1.263	1.151	1.597	1.599	1.617
CIFG16B7F38	*Sony Demo*	1.159	1.203	1.272	1.397	1.458	1.454	1.255	1.093	1.331	1.477	1.384
CIFG16B7F42	*Sony Demo*	1.210	1.208	1.282	1.382	1.489	1.390	1.228	0.987	1.130	1.359	1.105
CIFG16B7F48	*Sony Demo*	1.202	1.256	1.309	1.364	1.493	1.432	1.359	0.961	0.942	1.152	0.867
CIFG16B7F10	*Silence of the Lambs*	1.189	1.098	0.949	1.051	1.088	1.062	1.016	0.993	1.050	1.050	1.176
CIFG16B7F16	*Silence of the Lambs*	1.173	1.132	1.011	1.049	1.057	1.057	0.978	0.993	1.047	1.040	1.259
CIFG16B7F22	*Silence of the Lambs*	1.174	1.152	1.051	1.035	1.047	1.059	0.965	0.987	1.045	1.042	1.241
CIFG16B7F24	*Silence of the Lambs*	1.174	1.162	1.063	1.036	1.051	1.062	0.963	0.983	1.045	1.040	1.259
CIFG16B7F28	*Silence of the Lambs*	1.168	1.169	1.077	1.040	1.069	1.051	0.959	0.971	1.032	1.030	1.308
CIFG16B7F34	*Silence of the Lambs*	1.166	1.179	1.092	1.038	1.062	1.023	0.942	0.936	0.996	1.014	1.263
CIFG16B7F38	*Silence of the Lambs*	1.147	1.185	1.121	1.027	1.057	1.014	0.936	0.921	0.977	1.017	1.201
CIFG16B7F42	*Silence of the Lambs*	1.102	1.162	1.118	1.017	1.049	1.033	0.944	0.900	0.962	1.044	1.203
CIFG16B7F48	*Silence of the Lambs*	1.038	1.114	1.073	0.997	1.019	0.960	0.864	0.820	0.951	1.104	1.121

TABLE LI: *continued*

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7F10	*Star Wars 4*	1.136	1.015	0.975	0.903	0.945	0.966	0.929	0.974	0.965	0.929	0.721
CIFG16B7F16	*Star Wars 4*	1.133	1.038	1.006	0.925	0.929	0.980	0.901	0.972	0.984	0.925	0.755
CIFG16B7F22	*Star Wars 4*	1.141	1.066	1.024	0.944	0.929	0.978	0.905	0.985	0.972	0.913	0.813
CIFG16B7F24	*Star Wars 4*	1.141	1.074	1.030	0.952	0.927	0.984	0.909	0.990	0.959	0.904	0.821
CIFG16B7F28	*Star Wars 4*	1.140	1.088	1.046	0.959	0.917	1.004	0.918	0.993	0.948	0.881	0.829
CIFG16B7F34	*Star Wars 4*	1.131	1.096	1.059	0.965	0.943	0.980	0.906	0.979	0.927	0.839	0.763
CIFG16B7F38	*Star Wars 4*	1.113	1.086	1.051	0.961	0.922	1.015	0.892	0.976	0.921	0.814	0.751
CIFG16B7F42	*Star Wars 4*	1.084	1.074	1.065	0.963	0.920	1.008	0.883	0.952	0.920	0.810	0.760
CIFG16B7F48	*Star Wars 4*	0.980	1.012	1.013	0.988	0.925	1.010	0.875	0.972	0.963	0.832	0.823
CIFG16B7F10	*Tokyo Olympics*	1.227	1.206	1.200	1.145	1.053	1.027	1.074	1.043	1.128	1.125	1.105
CIFG16B7F16	*Tokyo Olympics*	1.206	1.220	1.179	1.123	1.066	0.974	1.001	1.054	1.065	1.039	0.998
CIFG16B7F22	*Tokyo Olympics*	1.213	1.197	1.154	1.081	1.028	0.959	0.981	1.022	0.984	0.940	0.930
CIFG16B7F24	*Tokyo Olympics*	1.212	1.190	1.143	1.072	1.025	0.958	0.977	1.023	0.971	0.928	0.928
CIFG16B7F28	*Tokyo Olympics*	1.210	1.177	1.127	1.059	1.008	0.957	0.976	1.008	0.952	0.907	0.917
CIFG16B7F34	*Tokyo Olympics*	1.195	1.164	1.106	1.039	0.995	0.961	0.974	1.008	0.938	0.884	0.888
CIFG16B7F38	*Tokyo Olympics*	1.186	1.153	1.091	1.036	0.983	0.965	0.954	0.998	0.928	0.864	0.875
CIFG16B7F42	*Tokyo Olympics*	1.166	1.150	1.079	1.029	0.981	0.950	0.942	1.001	0.930	0.864	0.865
CIFG16B7F48	*Tokyo Olympics*	1.103	1.101	1.044	0.991	0.986	0.952	0.933	0.996	0.935	0.886	0.882
CIFG16B7F10	*NBC 12 News*	1.083	1.083	1.018	1.007	0.919	1.025	0.865	0.794	0.773	0.858	1.185
CIFG16B7F16	*NBC 12 News*	1.092	1.076	1.021	0.988	0.922	0.994	0.856	0.784	0.712	0.866	1.116
CIFG16B7F22	*NBC 12 News*	1.032	1.030	0.998	0.975	0.871	0.932	0.864	0.828	0.705	0.923	1.053
CIFG16B7F24	*NBC 12 News*	1.009	1.019	0.987	0.955	0.862	0.930	0.870	0.833	0.702	0.941	1.062
CIFG16B7F28	*NBC 12 News*	0.972	1.000	0.959	0.939	0.867	0.952	0.891	0.853	0.734	0.957	1.074
CIFG16B7F34	*NBC 12 News*	0.943	0.977	0.938	0.927	0.885	0.911	0.893	0.880	0.816	0.938	1.141
CIFG16B7F38	*NBC 12 News*	0.933	0.961	0.931	0.927	0.874	0.892	0.885	0.911	0.867	0.880	1.147
CIFG16B7F42	*NBC 12 News*	0.936	0.956	0.908	0.932	0.881	0.890	0.854	0.958	0.950	0.831	1.165
CIFG16B7F48	*NBC 12 News*	0.931	0.960	0.877	0.943	0.938	0.821	0.878	0.997	1.107	0.906	1.021

TABLE LII: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B15F10	*Sony Demo*	1.238	1.329	1.330	1.220	1.429	1.366	1.279	1.119	1.057	0.917	1.138
CIFG16B15F16	*Sony Demo*	1.184	1.294	1.321	1.261	1.400	1.289	1.247	1.127	1.218	1.076	1.292
CIFG16B15F22	*Sony Demo*	1.149	1.248	1.292	1.311	1.445	1.313	1.296	1.176	1.366	1.415	1.506
CIFG16B15F24	*Sony Demo*	1.142	1.249	1.298	1.330	1.438	1.355	1.292	1.185	1.388	1.604	1.570
CIFG16B15F28	*Sony Demo*	1.157	1.256	1.304	1.388	1.485	1.308	1.300	1.197	1.750	1.644	1.621
CIFG16B15F34	*Sony Demo*	1.194	1.238	1.265	1.446	1.501	1.375	1.333	1.176	1.572	1.715	1.633
CIFG16B15F38	*Sony Demo*	1.196	1.226	1.232	1.427	1.448	1.449	1.230	1.125	1.303	1.457	1.324
CIFG16B15F42	*Sony Demo*	1.184	1.249	1.277	1.399	1.416	1.370	1.235	1.023	1.144	1.297	1.054
CIFG16B15F48	*Sony Demo*	1.211	1.245	1.306	1.359	1.458	1.358	1.247	0.919	0.911	1.060	0.829
CIFG16B15F10	*Silence of the Lambs*	1.192	1.084	0.942	1.054	1.074	1.040	1.018	0.994	1.019	1.056	1.231
CIFG16B15F16	*Silence of the Lambs*	1.182	1.121	1.005	1.044	1.056	1.035	0.986	0.994	1.022	1.037	1.241
CIFG16B15F22	*Silence of the Lambs*	1.180	1.154	1.052	1.032	1.043	1.050	0.974	0.990	1.014	1.039	1.218
CIFG16B15F24	*Silence of the Lambs*	1.184	1.153	1.064	1.022	1.040	1.051	0.978	0.989	1.019	1.041	1.232
CIFG16B15F28	*Silence of the Lambs*	1.189	1.173	1.079	1.011	1.043	1.042	0.976	0.968	1.013	1.034	1.280
CIFG16B15F34	*Silence of the Lambs*	1.196	1.194	1.086	1.001	1.055	1.020	0.962	0.935	0.985	1.033	1.278
CIFG16B15F38	*Silence of the Lambs*	1.174	1.183	1.102	1.009	1.040	1.000	0.952	0.912	0.969	1.032	1.186
CIFG16B15F42	*Silence of the Lambs*	1.119	1.150	1.089	1.007	1.033	1.009	0.958	0.897	0.966	1.058	1.195
CIFG16B15F48	*Silence of the Lambs*	1.052	1.100	1.069	1.002	0.978	0.932	0.892	0.834	0.923	1.062	1.100
CIFG16B15F10	*Star Wars 4*	1.147	1.012	0.973	0.904	0.928	0.962	0.904	0.965	0.966	0.939	0.756
CIFG16B15F16	*Star Wars 4*	1.165	1.035	0.985	0.916	0.928	0.956	0.864	0.945	0.958	0.902	0.740
CIFG16B15F22	*Star Wars 4*	1.168	1.059	1.010	0.942	0.935	0.949	0.881	0.950	0.935	0.881	0.775
CIFG16B15F24	*Star Wars 4*	1.170	1.072	1.021	0.948	0.933	0.953	0.886	0.954	0.914	0.878	0.785
CIFG16B15F28	*Star Wars 4*	1.162	1.088	1.033	0.949	0.918	0.953	0.894	0.960	0.908	0.849	0.795
CIFG16B15F34	*Star Wars 4*	1.158	1.094	1.038	0.954	0.908	0.945	0.876	0.964	0.902	0.827	0.752
CIFG16B15F38	*Star Wars 4*	1.141	1.085	1.033	0.953	0.903	0.963	0.870	0.933	0.902	0.814	0.754
CIFG16B15F42	*Star Wars 4*	1.100	1.075	1.041	0.952	0.915	0.964	0.872	0.918	0.918	0.828	0.769
CIFG16B15F48	*Star Wars 4*	0.971	1.004	0.991	0.988	0.901	1.028	0.898	0.982	0.951	0.857	0.820
CIFG16B15F10	*Tokyo Olympics*	1.231	1.209	1.201	1.152	1.051	1.024	1.083	1.043	1.139	1.116	1.098
CIFG16B15F16	*Tokyo Olympics*	1.213	1.211	1.182	1.128	1.058	0.974	1.005	1.041	1.060	1.031	1.011
CIFG16B15F22	*Tokyo Olympics*	1.214	1.191	1.146	1.085	1.023	0.948	0.971	1.007	0.982	0.932	0.923
CIFG16B15F24	*Tokyo Olympics*	1.210	1.178	1.137	1.077	1.016	0.948	0.970	1.011	0.965	0.923	0.924
CIFG16B15F28	*Tokyo Olympics*	1.213	1.164	1.122	1.063	1.005	0.948	0.974	1.000	0.949	0.901	0.916
CIFG16B15F34	*Tokyo Olympics*	1.204	1.156	1.100	1.053	0.990	0.944	0.974	0.993	0.932	0.876	0.890
CIFG16B15F38	*Tokyo Olympics*	1.196	1.144	1.090	1.036	0.978	0.950	0.956	1.000	0.934	0.864	0.872
CIFG16B15F42	*Tokyo Olympics*	1.172	1.136	1.075	1.022	0.981	0.950	0.934	1.020	0.942	0.871	0.864

TABLE LII: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B15F48	*Tokyo Olympics*	1.102	1.092	1.032	0.989	0.975	0.952	0.931	0.979	0.914	0.853	0.881
CIFG16B15F10	*NBC 12 News*	1.100	1.097	1.011	0.994	0.898	0.982	0.854	0.780	0.768	0.850	1.159
CIFG16B15F16	*NBC 12 News*	1.102	1.075	1.011	0.962	0.899	0.951	0.847	0.779	0.742	0.871	1.086
CIFG16B15F22	*NBC 12 News*	1.027	1.033	0.991	0.972	0.851	0.949	0.847	0.816	0.701	0.918	1.010
CIFG16B15F24	*NBC 12 News*	1.014	1.029	0.986	0.959	0.843	0.940	0.850	0.819	0.688	0.932	1.029
CIFG16B15F28	*NBC 12 News*	0.981	1.006	0.960	0.944	0.836	0.948	0.857	0.846	0.695	0.946	1.031
CIFG16B15F34	*NBC 12 News*	0.960	0.985	0.926	0.920	0.837	0.934	0.865	0.875	0.789	0.957	1.098
CIFG16B15F38	*NBC 12 News*	0.954	0.977	0.913	0.927	0.831	0.892	0.865	0.918	0.864	0.902	1.089
CIFG16B15F42	*NBC 12 News*	0.956	0.968	0.904	0.909	0.837	0.851	0.851	0.944	0.991	0.864	1.154
CIFG16B15F48	*NBC 12 News*	0.955	0.969	0.876	0.927	0.892	0.789	0.824	0.961	1.041	0.965	1.009

TABLE LIII: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG12B2F10	*Sony Demo*	1.205	1.355	1.368	1.282	1.467	1.128	1.146	1.539	0.957	1.194	1.045
CIFG12B2F16	*Sony Demo*	1.169	1.333	1.390	1.351	1.468	1.137	1.150	1.390	1.093	1.379	1.154
CIFG12B2F22	*Sony Demo*	1.125	1.254	1.382	1.376	1.497	1.164	1.174	1.434	1.172	1.436	1.308
CIFG12B2F24	*Sony Demo*	1.105	1.232	1.367	1.376	1.513	1.172	1.185	1.370	1.199	1.409	1.370
CIFG12B2F28	*Sony Demo*	1.106	1.244	1.347	1.352	1.612	1.210	1.194	1.324	1.254	1.397	1.537
CIFG12B2F34	*Sony Demo*	1.089	1.164	1.269	1.337	1.498	1.206	1.245	1.260	1.272	1.394	1.654
CIFG12B2F38	*Sony Demo*	1.108	1.184	1.292	1.365	1.509	1.217	1.337	1.215	1.162	1.411	1.379
CIFG12B2F42	*Sony Demo*	1.140	1.209	1.304	1.393	1.500	1.295	1.385	1.241	1.024	1.372	1.152
CIFG12B2F48	*Sony Demo*	1.123	1.307	1.351	1.377	1.515	1.347	1.405	1.116	0.889	1.242	0.922
CIFG12B2F10	*Silence of the Lambs*	1.203	1.135	0.933	1.061	1.090	1.068	1.058	1.128	1.128	1.188	1.156
CIFG12B2F16	*Silence of the Lambs*	1.160	1.152	1.015	1.057	1.072	1.059	1.053	1.083	1.151	1.195	1.184
CIFG12B2F22	*Silence of the Lambs*	1.180	1.176	1.046	1.057	1.059	1.060	1.033	1.057	1.139	1.180	1.178
CIFG12B2F24	*Silence of the Lambs*	1.174	1.183	1.059	1.065	1.059	1.061	1.036	1.050	1.148	1.173	1.176
CIFG12B2F28	*Silence of the Lambs*	1.172	1.186	1.075	1.054	1.071	1.065	1.020	1.039	1.200	1.164	1.166
CIFG12B2F34	*Silence of the Lambs*	1.160	1.203	1.098	1.050	1.066	1.040	1.023	1.014	1.143	1.140	1.135
CIFG12B2F38	*Silence of the Lambs*	1.131	1.191	1.123	1.052	1.067	1.049	1.002	1.001	1.144	1.140	1.129
CIFG12B2F42	*Silence of the Lambs*	1.092	1.157	1.127	1.026	1.047	1.026	0.973	0.984	1.094	1.131	1.141
CIFG12B2F48	*Silence of the Lambs*	1.034	1.093	1.096	1.003	1.043	0.966	0.936	0.929	1.035	1.092	1.127
720pG12B2FxT10	*Sony Demo*	1.269	1.386	1.404	1.219	1.448	1.137	1.083	1.263	0.809	0.944	0.978
720pG12B2FxT22	*Sony Demo*	1.168	1.310	1.403	1.318	1.433	1.152	1.086	1.341	1.011	1.180	1.105
720pG12B2FxT28	*Sony Demo*	1.140	1.279	1.401	1.342	1.441	1.184	1.099	1.294	1.077	1.231	1.232
720pG12B2FxT34	*Sony Demo*	1.119	1.249	1.403	1.326	1.463	1.207	1.122	1.254	1.173	1.235	1.456
720pG12B2FxT38	*Sony Demo*	1.089	1.169	1.287	1.294	1.495	1.127	1.150	1.244	1.264	1.317	1.639
720pG12B2FxT42	*Sony Demo*	1.100	1.176	1.292	1.290	1.468	1.164	1.165	1.240	1.226	1.316	1.538
720pG12B2FxT48	*Sony Demo*	1.150	1.245	1.277	1.327	1.482	1.172	1.317	1.170	1.023	1.330	1.177
720pG12B2FxT10	*Terminator 2*	1.244	1.113	1.135	1.042	0.978	0.857	0.543	0.667	0.648	1.044	0.819
720pG12B2FxT22	*Terminator 2*	1.211	1.150	1.141	1.025	0.988	0.835	0.600	0.600	0.632	0.931	0.813
720pG12B2FxT28	*Terminator 2*	1.186	1.135	1.151	1.017	0.924	0.802	0.583	0.572	0.571	0.802	0.782
720pG12B2FxT34	*Terminator 2*	1.173	1.111	1.103	0.997	0.859	0.837	0.565	0.568	0.533	0.734	0.826
720pG12B2FxT38	*Terminator 2*	1.154	1.112	1.094	0.985	0.827	0.783	0.609	0.588	0.594	0.744	0.903
720pG12B2FxT42	*Terminator 2*	1.147	1.129	1.095	0.990	0.822	0.781	0.604	0.621	0.674	0.784	1.015
720pG12B2FxT48	*Terminator 2*	1.153	1.151	1.095	0.969	0.805	0.722	0.565	0.586	0.772	0.630	0.916

B. MPEG–4 Part 2

TABLE LIV: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B1Mp01	*Sony Demo*	1.017	0.853	0.801	0.807	0.805	0.811	0.744	0.941	0.569	0.597	0.618	0.681
CIFG16B1Mp02	*Sony Demo*	0.967	0.850	0.790	0.780	0.775	0.803	0.678	0.840	0.519	0.452	0.662	0.668
CIFG16B1Mp04	*Sony Demo*	0.916	0.843	0.796	0.796	0.793	0.823	0.666	0.781	0.435	0.413	0.661	0.661
CIFG16B1Mp08	*Sony Demo*	0.869	0.860	0.819	0.814	0.783	0.798	0.632	0.725	0.481	0.328	0.578	0.591
CIFG16B1Mp12	*Sony Demo*	0.848	0.864	0.837	0.811	0.774	0.773	0.621	0.736	0.605	0.390	0.525	0.741
CIFG16B1Mp16	*Sony Demo*	0.835	0.854	0.825	0.813	0.779	0.790	0.662	0.803	0.710	0.563	0.555	0.805
CIFG16B1Mp20	*Sony Demo*	0.832	0.850	0.822	0.814	0.790	0.805	0.702	0.849	0.763	0.597	0.566	0.821
CIFG16B1Mp24	*Sony Demo*	0.841	0.848	0.823	0.814	0.795	0.811	0.732	0.866	0.779	0.588	0.594	0.812
CIFG16B1Mp28	*Sony Demo*	0.854	0.857	0.825	0.815	0.803	0.820	0.752	0.843	0.712	0.583	0.626	0.785
CIFG16B1Mp01	*Silence of the Lambs*	0.986	0.915	0.919	0.923	0.915	0.907	0.895	0.941	0.943	0.961	0.952	0.959
CIFG16B1Mp02	*Silence of the Lambs*	0.958	0.905	0.913	0.918	0.906	0.905	0.899	0.938	0.935	0.962	0.918	0.935
CIFG16B1Mp04	*Silence of the Lambs*	0.928	0.898	0.895	0.902	0.879	0.891	0.889	0.931	0.918	0.914	0.877	0.907
CIFG16B1Mp08	*Silence of the Lambs*	0.904	0.889	0.875	0.874	0.856	0.866	0.859	0.912	0.871	0.858	0.839	0.849
CIFG16B1Mp12	*Silence of the Lambs*	0.897	0.875	0.861	0.869	0.848	0.853	0.828	0.882	0.833	0.831	0.826	0.823
CIFG16B1Mp16	*Silence of the Lambs*	0.896	0.864	0.850	0.863	0.842	0.846	0.818	0.860	0.807	0.823	0.828	0.809
CIFG16B1Mp20	*Silence of the Lambs*	0.895	0.858	0.843	0.855	0.836	0.840	0.817	0.845	0.794	0.818	0.832	0.801
CIFG16B1Mp24	*Silence of the Lambs*	0.898	0.853	0.838	0.852	0.834	0.835	0.814	0.839	0.781	0.810	0.836	0.801
CIFG16B1Mp28	*Silence of the Lambs*	0.894	0.851	0.837	0.855	0.835	0.831	0.814	0.832	0.769	0.806	0.840	0.799
CIFG16B1Mp01	*Star Wars 4*	0.948	0.850	0.835	0.848	0.837	0.830	0.794	0.795	0.809	0.836	0.848	0.763
CIFG16B1Mp02	*Star Wars 4*	0.908	0.850	0.842	0.868	0.839	0.862	0.862	0.873	0.886	0.945	0.970	0.886
CIFG16B1Mp04	*Star Wars 4*	0.883	0.853	0.849	0.871	0.848	0.864	0.865	0.892	0.889	0.947	0.996	0.915
CIFG16B1Mp08	*Star Wars 4*	0.861	0.846	0.844	0.859	0.835	0.858	0.840	0.869	0.864	0.920	0.967	0.929
CIFG16B1Mp12	*Star Wars 4*	0.850	0.837	0.835	0.848	0.825	0.848	0.819	0.833	0.834	0.886	0.926	0.897
CIFG16B1Mp16	*Star Wars 4*	0.845	0.833	0.828	0.840	0.814	0.836	0.802	0.808	0.813	0.853	0.885	0.858
CIFG16B1Mp20	*Star Wars 4*	0.844	0.829	0.822	0.832	0.808	0.824	0.798	0.791	0.797	0.845	0.864	0.840
CIFG16B1Mp24	*Star Wars 4*	0.847	0.830	0.823	0.830	0.808	0.820	0.794	0.780	0.788	0.835	0.854	0.826
CIFG16B1Mp28	*Star Wars 4*	0.846	0.829	0.825	0.828	0.808	0.818	0.793	0.777	0.784	0.833	0.854	0.825
CIFG16B1Mp01	*Tokyo Olympics*	0.952	0.869	0.859	0.848	0.829	0.816	0.850	0.835	0.839	0.818	0.854	0.821
CIFG16B1Mp02	*Tokyo Olympics*	0.961	0.878	0.866	0.863	0.854	0.855	0.883	0.883	0.884	0.856	0.920	0.888
CIFG16B1Mp04	*Tokyo Olympics*	0.956	0.883	0.876	0.868	0.871	0.872	0.898	0.892	0.895	0.857	0.923	0.897
CIFG16B1Mp08	*Tokyo Olympics*	0.937	0.878	0.874	0.860	0.867	0.871	0.895	0.878	0.882	0.865	0.916	0.889
CIFG16B1Mp12	*Tokyo Olympics*	0.928	0.879	0.870	0.856	0.859	0.863	0.869	0.873	0.868	0.856	0.891	0.874
CIFG16B1Mp16	*Tokyo Olympics*	0.925	0.879	0.871	0.849	0.847	0.846	0.848	0.857	0.859	0.843	0.871	0.849
CIFG16B1Mp20	*Tokyo Olympics*	0.921	0.873	0.869	0.841	0.838	0.832	0.834	0.839	0.848	0.831	0.859	0.830
CIFG16B1Mp24	*Tokyo Olympics*	0.925	0.867	0.860	0.830	0.827	0.818	0.821	0.824	0.837	0.815	0.845	0.812
CIFG16B1Mp28	*Tokyo Olympics*	0.928	0.863	0.854	0.826	0.822	0.811	0.808	0.814	0.828	0.800	0.830	0.806
CIFG16B1Mp01	*NBC 12 News*	0.978	0.884	0.872	0.889	0.884	0.911	0.881	0.877	0.846	0.875	0.863	0.829
CIFG16B1Mp02	*NBC 12 News*	0.939	0.872	0.872	0.893	0.872	0.879	0.825	0.858	0.827	0.818	0.818	0.745
CIFG16B1Mp04	*NBC 12 News*	0.898	0.852	0.844	0.864	0.843	0.823	0.787	0.791	0.773	0.782	0.729	0.654
CIFG16B1Mp08	*NBC 12 News*	0.857	0.827	0.815	0.814	0.781	0.767	0.784	0.732	0.691	0.787	0.734	0.567
CIFG16B1Mp12	*NBC 12 News*	0.839	0.820	0.810	0.808	0.788	0.780	0.795	0.760	0.682	0.767	0.741	0.661
CIFG16B1Mp16	*NBC 12 News*	0.829	0.817	0.811	0.810	0.808	0.795	0.816	0.791	0.729	0.796	0.810	0.769
CIFG16B1Mp20	*NBC 12 News*	0.828	0.816	0.811	0.814	0.818	0.807	0.841	0.801	0.765	0.835	0.850	0.773
CIFG16B1Mp24	*NBC 12 News*	0.829	0.815	0.809	0.820	0.826	0.817	0.848	0.808	0.786	0.867	0.866	0.783
CIFG16B1Mp28	*NBC 12 News*	0.830	0.814	0.807	0.826	0.834	0.830	0.856	0.822	0.803	0.890	0.883	0.808

TABLE LV: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3Mp01	*Sony Demo*	1.009	0.868	0.808	0.795	0.793	0.801	0.765	0.853	0.617	0.580	0.624	0.633
CIFG16B3Mp02	*Sony Demo*	0.968	0.862	0.803	0.783	0.773	0.797	0.758	0.775	0.583	0.555	0.659	0.677
CIFG16B3Mp04	*Sony Demo*	0.918	0.862	0.807	0.796	0.779	0.823	0.697	0.760	0.520	0.458	0.641	0.646
CIFG16B3Mp08	*Sony Demo*	0.862	0.875	0.836	0.817	0.785	0.786	0.624	0.753	0.591	0.377	0.536	0.767
CIFG16B3Mp12	*Sony Demo*	0.845	0.874	0.834	0.821	0.784	0.789	0.653	0.818	0.717	0.536	0.566	0.808
CIFG16B3Mp16	*Sony Demo*	0.839	0.873	0.834	0.823	0.801	0.812	0.705	0.857	0.749	0.582	0.579	0.825
CIFG16B3Mp20	*Sony Demo*	0.838	0.868	0.836	0.820	0.803	0.826	0.755	0.867	0.784	0.596	0.622	0.829
CIFG16B3Mp24	*Sony Demo*	0.849	0.869	0.839	0.824	0.808	0.845	0.791	0.855	0.737	0.597	0.660	0.787
CIFG16B3Mp28	*Sony Demo*	0.862	0.872	0.838	0.832	0.815	0.849	0.830	0.883	0.761	0.598	0.661	0.731
CIFG16B3Mp01	*Silence of the Lambs*	0.979	0.923	0.920	0.929	0.918	0.909	0.892	0.944	0.949	0.963	0.946	0.953
CIFG16B3Mp02	*Silence of the Lambs*	0.960	0.905	0.903	0.918	0.899	0.902	0.900	0.936	0.934	0.953	0.911	0.927
CIFG16B3Mp04	*Silence of the Lambs*	0.936	0.897	0.889	0.893	0.874	0.885	0.888	0.921	0.919	0.900	0.880	0.896

TABLE LV: *continued*

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3Mp08	*Silence of the Lambs*	0.910	0.883	0.867	0.873	0.856	0.869	0.851	0.910	0.869	0.854	0.842	0.844
CIFG16B3Mp12	*Silence of the Lambs*	0.898	0.872	0.856	0.874	0.860	0.860	0.829	0.886	0.842	0.842	0.841	0.829
CIFG16B3Mp16	*Silence of the Lambs*	0.893	0.864	0.848	0.868	0.850	0.850	0.821	0.866	0.819	0.835	0.848	0.818
CIFG16B3Mp20	*Silence of the Lambs*	0.888	0.859	0.845	0.862	0.844	0.839	0.815	0.849	0.802	0.829	0.853	0.815
CIFG16B3Mp24	*Silence of the Lambs*	0.887	0.850	0.833	0.857	0.837	0.829	0.801	0.836	0.781	0.816	0.852	0.804
CIFG16B3Mp28	*Silence of the Lambs*	0.885	0.847	0.829	0.849	0.826	0.822	0.796	0.822	0.763	0.807	0.852	0.796
CIFG16B3Mp01	*Star Wars 4*	0.951	0.853	0.841	0.856	0.841	0.842	0.808	0.818	0.826	0.862	0.882	0.799
CIFG16B3Mp02	*Star Wars 4*	0.915	0.853	0.843	0.872	0.847	0.871	0.872	0.895	0.890	0.955	0.988	0.904
CIFG16B3Mp04	*Star Wars 4*	0.886	0.850	0.848	0.873	0.854	0.873	0.870	0.905	0.894	0.957	1.016	0.928
CIFG16B3Mp08	*Star Wars 4*	0.857	0.840	0.839	0.855	0.835	0.857	0.839	0.858	0.853	0.925	0.965	0.929
CIFG16B3Mp12	*Star Wars 4*	0.836	0.828	0.826	0.840	0.817	0.834	0.807	0.807	0.811	0.878	0.894	0.867
CIFG16B3Mp16	*Star Wars 4*	0.825	0.817	0.813	0.821	0.803	0.813	0.786	0.772	0.777	0.845	0.844	0.806
CIFG16B3Mp20	*Star Wars 4*	0.820	0.808	0.799	0.806	0.789	0.795	0.769	0.756	0.763	0.828	0.822	0.795
CIFG16B3Mp24	*Star Wars 4*	0.822	0.815	0.801	0.801	0.790	0.793	0.764	0.742	0.744	0.803	0.786	0.759
CIFG16B3Mp28	*Star Wars 4*	0.826	0.817	0.806	0.806	0.791	0.794	0.769	0.748	0.746	0.801	0.781	0.759
CIFG16B3Mp01	*Tokyo Olympics*	0.959	0.877	0.867	0.849	0.831	0.825	0.856	0.838	0.841	0.832	0.866	0.828
CIFG16B3Mp02	*Tokyo Olympics*	0.966	0.883	0.874	0.859	0.852	0.857	0.880	0.880	0.884	0.860	0.921	0.889
CIFG16B3Mp04	*Tokyo Olympics*	0.955	0.883	0.881	0.861	0.864	0.870	0.895	0.887	0.893	0.859	0.928	0.897
CIFG16B3Mp08	*Tokyo Olympics*	0.936	0.880	0.879	0.863	0.869	0.869	0.881	0.872	0.874	0.862	0.921	0.889
CIFG16B3Mp12	*Tokyo Olympics*	0.923	0.880	0.875	0.859	0.858	0.852	0.852	0.865	0.863	0.849	0.901	0.880
CIFG16B3Mp16	*Tokyo Olympics*	0.918	0.881	0.875	0.853	0.845	0.839	0.835	0.849	0.856	0.839	0.879	0.859
CIFG16B3Mp20	*Tokyo Olympics*	0.907	0.873	0.872	0.843	0.836	0.828	0.823	0.834	0.844	0.829	0.859	0.841
CIFG16B3Mp24	*Tokyo Olympics*	0.911	0.867	0.864	0.831	0.824	0.815	0.810	0.821	0.833	0.818	0.842	0.822
CIFG16B3Mp28	*Tokyo Olympics*	0.911	0.862	0.858	0.826	0.819	0.809	0.797	0.812	0.823	0.803	0.828	0.813
CIFG16B3Mp01	*NBC 12 News*	0.957	0.879	0.872	0.892	0.881	0.905	0.866	0.868	0.839	0.860	0.843	0.807
CIFG16B3Mp02	*NBC 12 News*	0.937	0.866	0.866	0.886	0.871	0.872	0.816	0.851	0.822	0.812	0.805	0.729
CIFG16B3Mp04	*NBC 12 News*	0.901	0.849	0.838	0.855	0.836	0.814	0.785	0.788	0.763	0.781	0.726	0.642
CIFG16B3Mp08	*NBC 12 News*	0.861	0.833	0.816	0.815	0.785	0.772	0.786	0.731	0.693	0.766	0.746	0.574
CIFG16B3Mp12	*NBC 12 News*	0.842	0.829	0.815	0.814	0.801	0.792	0.802	0.766	0.683	0.772	0.748	0.696
CIFG16B3Mp16	*NBC 12 News*	0.830	0.825	0.813	0.818	0.817	0.810	0.824	0.793	0.733	0.795	0.812	0.757
CIFG16B3Mp20	*NBC 12 News*	0.824	0.821	0.811	0.818	0.820	0.822	0.843	0.809	0.763	0.837	0.848	0.765
CIFG16B3Mp24	*NBC 12 News*	0.821	0.817	0.805	0.821	0.825	0.829	0.843	0.823	0.787	0.870	0.870	0.781
CIFG16B3Mp28	*NBC 12 News*	0.821	0.817	0.802	0.826	0.834	0.839	0.856	0.844	0.798	0.884	0.890	0.817

TABLE LVI: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7Mp01	*Sony Demo*	1.013	0.881	0.827	0.797	0.786	0.788	0.796	0.852	0.683	0.623	0.616	0.636
CIFG16B7Mp02	*Sony Demo*	0.977	0.878	0.828	0.795	0.781	0.817	0.802	0.792	0.695	0.616	0.655	0.706
CIFG16B7Mp04	*Sony Demo*	0.929	0.880	0.839	0.820	0.796	0.817	0.754	0.787	0.670	0.531	0.610	0.642
CIFG16B7Mp08	*Sony Demo*	0.872	0.883	0.856	0.857	0.819	0.810	0.636	0.848	0.698	0.450	0.558	0.780
CIFG16B7Mp12	*Sony Demo*	0.851	0.887	0.856	0.845	0.824	0.818	0.689	0.884	0.766	0.555	0.527	0.887
CIFG16B7Mp16	*Sony Demo*	0.849	0.882	0.854	0.836	0.816	0.831	0.748	0.879	0.784	0.596	0.569	0.890
CIFG16B7Mp20	*Sony Demo*	0.852	0.874	0.855	0.831	0.810	0.857	0.811	0.886	0.760	0.621	0.677	0.826
CIFG16B7Mp24	*Sony Demo*	0.860	0.887	0.860	0.839	0.819	0.869	0.856	0.930	0.801	0.625	0.730	0.844
CIFG16B7Mp28	*Sony Demo*	0.874	0.882	0.860	0.845	0.826	0.882	0.842	0.958	0.825	0.645	0.766	0.866
CIFG16B7Mp01	*Silence of the Lambs*	0.979	0.919	0.916	0.934	0.911	0.907	0.895	0.946	0.949	0.968	0.950	0.954
CIFG16B7Mp02	*Silence of the Lambs*	0.959	0.902	0.897	0.913	0.891	0.901	0.900	0.937	0.933	0.949	0.908	0.922
CIFG16B7Mp04	*Silence of the Lambs*	0.937	0.893	0.882	0.888	0.864	0.883	0.886	0.920	0.916	0.891	0.878	0.888
CIFG16B7Mp08	*Silence of the Lambs*	0.908	0.879	0.859	0.875	0.858	0.864	0.849	0.912	0.879	0.851	0.844	0.851
CIFG16B7Mp12	*Silence of the Lambs*	0.888	0.866	0.848	0.858	0.836	0.854	0.830	0.886	0.855	0.844	0.856	0.828
CIFG16B7Mp16	*Silence of the Lambs*	0.880	0.854	0.837	0.849	0.829	0.839	0.821	0.859	0.825	0.834	0.856	0.814
CIFG16B7Mp20	*Silence of the Lambs*	0.874	0.850	0.832	0.845	0.822	0.828	0.810	0.832	0.797	0.824	0.851	0.799
CIFG16B7Mp24	*Silence of the Lambs*	0.874	0.844	0.825	0.831	0.803	0.805	0.788	0.796	0.772	0.804	0.844	0.763
CIFG16B7Mp28	*Silence of the Lambs*	0.869	0.840	0.824	0.830	0.795	0.796	0.784	0.772	0.771	0.795	0.822	0.732
CIFG16B7Mp01	*Star Wars 4*	0.952	0.857	0.847	0.861	0.851	0.853	0.820	0.832	0.839	0.881	0.896	0.821
CIFG16B7Mp02	*Star Wars 4*	0.920	0.864	0.849	0.870	0.860	0.881	0.888	0.912	0.904	0.968	1.014	0.933
CIFG16B7Mp04	*Star Wars 4*	0.895	0.849	0.847	0.869	0.861	0.884	0.884	0.923	0.908	0.979	1.041	0.957
CIFG16B7Mp08	*Star Wars 4*	0.861	0.832	0.835	0.852	0.833	0.852	0.852	0.870	0.865	0.940	0.964	0.949
CIFG16B7Mp12	*Star Wars 4*	0.833	0.817	0.814	0.823	0.809	0.818	0.813	0.803	0.813	0.881	0.851	0.856
CIFG16B7Mp16	*Star Wars 4*	0.819	0.803	0.803	0.801	0.793	0.794	0.783	0.760	0.780	0.840	0.807	0.815
CIFG16B7Mp20	*Star Wars 4*	0.809	0.798	0.792	0.790	0.779	0.780	0.775	0.748	0.770	0.826	0.778	0.814
CIFG16B7Mp24	*Star Wars 4*	0.810	0.815	0.800	0.789	0.791	0.793	0.789	0.743	0.744	0.820	0.791	0.772
CIFG16B7Mp28	*Star Wars 4*	0.819	0.820	0.817	0.812	0.806	0.809	0.803	0.757	0.749	0.821	0.802	0.776
CIFG16B7Mp01	*Tokyo Olympics*	0.959	0.878	0.866	0.852	0.833	0.831	0.862	0.850	0.845	0.841	0.875	0.840
CIFG16B7Mp02	*Tokyo Olympics*	0.964	0.882	0.874	0.860	0.850	0.859	0.880	0.877	0.885	0.864	0.929	0.894

TABLE LVI: *continued*

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7Mp04	*Tokyo Olympics*	0.954	0.879	0.877	0.863	0.862	0.874	0.893	0.888	0.891	0.866	0.933	0.898
CIFG16B7Mp08	*Tokyo Olympics*	0.937	0.879	0.879	0.869	0.867	0.868	0.876	0.875	0.873	0.871	0.927	0.891
CIFG16B7Mp12	*Tokyo Olympics*	0.920	0.887	0.881	0.869	0.862	0.855	0.850	0.875	0.867	0.858	0.916	0.889
CIFG16B7Mp16	*Tokyo Olympics*	0.909	0.885	0.881	0.863	0.852	0.843	0.832	0.863	0.862	0.851	0.891	0.877
CIFG16B7Mp20	*Tokyo Olympics*	0.892	0.883	0.885	0.857	0.846	0.837	0.823	0.850	0.854	0.847	0.863	0.865
CIFG16B7Mp24	*Tokyo Olympics*	0.898	0.880	0.883	0.847	0.835	0.826	0.809	0.835	0.843	0.834	0.848	0.854
CIFG16B7Mp28	*Tokyo Olympics*	0.893	0.881	0.882	0.842	0.828	0.818	0.798	0.822	0.835	0.819	0.837	0.846
CIFG16B7Mp01	*NBC 12 News*	0.948	0.870	0.866	0.888	0.874	0.897	0.856	0.867	0.840	0.861	0.834	0.797
CIFG16B7Mp02	*NBC 12 News*	0.935	0.857	0.856	0.881	0.865	0.861	0.811	0.848	0.817	0.811	0.799	0.716
CIFG16B7Mp04	*NBC 12 News*	0.908	0.841	0.828	0.847	0.826	0.808	0.779	0.782	0.753	0.774	0.734	0.624
CIFG16B7Mp08	*NBC 12 News*	0.872	0.829	0.810	0.806	0.782	0.772	0.783	0.726	0.684	0.739	0.747	0.574
CIFG16B7Mp12	*NBC 12 News*	0.846	0.827	0.809	0.809	0.805	0.800	0.802	0.768	0.678	0.754	0.764	0.710
CIFG16B7Mp16	*NBC 12 News*	0.831	0.823	0.806	0.811	0.819	0.819	0.825	0.799	0.730	0.792	0.825	0.738
CIFG16B7Mp20	*NBC 12 News*	0.822	0.819	0.804	0.809	0.820	0.829	0.844	0.823	0.761	0.832	0.860	0.749
CIFG16B7Mp24	*NBC 12 News*	0.818	0.817	0.804	0.810	0.822	0.834	0.853	0.852	0.777	0.870	0.882	0.778
CIFG16B7Mp28	*NBC 12 News*	0.816	0.818	0.802	0.814	0.832	0.844	0.860	0.858	0.775	0.868	0.890	0.809

TABLE LVII: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B15Mp01	*Sony Demo*	1.003	0.886	0.851	0.812	0.801	0.804	0.848	0.853	0.770	0.673	0.644	0.657
CIFG16B15Mp02	*Sony Demo*	0.988	0.892	0.854	0.813	0.788	0.808	0.835	0.804	0.834	0.693	0.707	0.718
CIFG16B15Mp04	*Sony Demo*	0.954	0.895	0.866	0.836	0.810	0.816	0.786	0.818	0.874	0.633	0.660	0.746
CIFG16B15Mp08	*Sony Demo*	0.899	0.896	0.877	0.865	0.839	0.822	0.678	0.916	0.811	0.562	0.535	0.852
CIFG16B15Mp12	*Sony Demo*	0.878	0.899	0.865	0.879	0.877	0.837	0.714	0.900	0.659	0.541	0.468	0.880
CIFG16B15Mp16	*Sony Demo*	0.878	0.900	0.860	0.856	0.840	0.843	0.752	0.867	0.631	0.552	0.563	0.846
CIFG16B15Mp20	*Sony Demo*	0.887	0.887	0.866	0.845	0.825	0.866	0.846	0.897	0.693	0.569	0.693	0.764
CIFG16B15Mp24	*Sony Demo*	0.902	0.912	0.872	0.854	0.830	0.877	0.851	0.953	0.737	0.566	0.719	0.833
CIFG16B15Mp28	*Sony Demo*	0.918	0.905	0.871	0.850	0.822	0.856	0.789	0.945	0.742	0.542	0.734	0.874
CIFG16B15Mp01	*Silence of the Lambs*	0.973	0.916	0.909	0.925	0.909	0.903	0.904	0.955	0.954	0.970	0.949	0.955
CIFG16B15Mp02	*Silence of the Lambs*	0.969	0.898	0.889	0.908	0.887	0.903	0.910	0.945	0.937	0.945	0.899	0.921
CIFG16B15Mp04	*Silence of the Lambs*	0.955	0.888	0.878	0.877	0.864	0.887	0.880	0.935	0.913	0.887	0.870	0.893
CIFG16B15Mp08	*Silence of the Lambs*	0.936	0.865	0.851	0.853	0.835	0.860	0.849	0.902	0.889	0.857	0.833	0.855
CIFG16B15Mp12	*Silence of the Lambs*	0.928	0.851	0.833	0.833	0.822	0.856	0.848	0.870	0.884	0.865	0.825	0.804
CIFG16B15Mp16	*Silence of the Lambs*	0.921	0.834	0.816	0.803	0.780	0.803	0.821	0.821	0.799	0.767	0.738	0.710
CIFG16B15Mp20	*Silence of the Lambs*	0.903	0.827	0.808	0.796	0.765	0.775	0.778	0.755	0.765	0.738	0.715	0.721
CIFG16B15Mp24	*Silence of the Lambs*	0.904	0.825	0.805	0.793	0.758	0.760	0.762	0.760	0.766	0.773	0.695	0.801
CIFG16B15Mp28	*Silence of the Lambs*	0.902	0.823	0.802	0.792	0.769	0.776	0.750	0.792	0.775	0.759	0.694	0.858
CIFG16B15Mp01	*Star Wars 4*	0.951	0.859	0.853	0.865	0.864	0.864	0.831	0.847	0.849	0.889	0.906	0.836
CIFG16B15Mp02	*Star Wars 4*	0.931	0.869	0.851	0.875	0.871	0.889	0.891	0.929	0.910	0.979	1.047	0.962
CIFG16B15Mp04	*Star Wars 4*	0.911	0.847	0.849	0.872	0.863	0.890	0.896	0.937	0.926	1.006	1.076	0.999
CIFG16B15Mp08	*Star Wars 4*	0.893	0.821	0.830	0.845	0.834	0.853	0.870	0.901	0.915	0.964	0.985	0.960
CIFG16B15Mp12	*Star Wars 4*	0.877	0.806	0.815	0.817	0.811	0.807	0.819	0.832	0.830	0.863	0.834	0.852
CIFG16B15Mp16	*Star Wars 4*	0.877	0.803	0.810	0.811	0.798	0.794	0.799	0.789	0.778	0.823	0.774	0.807
CIFG16B15Mp20	*Star Wars 4*	0.883	0.805	0.805	0.809	0.805	0.805	0.783	0.781	0.753	0.796	0.742	0.791
CIFG16B15Mp24	*Star Wars 4*	0.906	0.816	0.818	0.838	0.836	0.857	0.818	0.824	0.787	0.817	0.788	0.774
CIFG16B15Mp28	*Star Wars 4*	0.917	0.853	0.853	0.845	0.854	0.865	0.823	0.810	0.745	0.787	0.740	0.718
CIFG16B15Mp01	*NBC 12 News*	0.932	0.861	0.863	0.886	0.871	0.882	0.850	0.861	0.835	0.869	0.816	0.771
CIFG16B15Mp02	*NBC 12 News*	0.936	0.849	0.847	0.876	0.862	0.842	0.803	0.829	0.790	0.812	0.780	0.692
CIFG16B15Mp04	*NBC 12 News*	0.912	0.827	0.818	0.832	0.813	0.795	0.774	0.762	0.738	0.762	0.765	0.593
CIFG16B15Mp08	*NBC 12 News*	0.885	0.814	0.807	0.805	0.787	0.780	0.770	0.737	0.682	0.709	0.743	0.602
CIFG16B15Mp12	*NBC 12 News*	0.870	0.808	0.805	0.814	0.807	0.792	0.795	0.779	0.688	0.758	0.792	0.732
CIFG16B15Mp16	*NBC 12 News*	0.857	0.806	0.806	0.819	0.822	0.809	0.827	0.825	0.735	0.816	0.838	0.762
CIFG16B15Mp20	*NBC 12 News*	0.851	0.806	0.807	0.816	0.822	0.819	0.846	0.839	0.758	0.864	0.862	0.769
CIFG16B15Mp24	*NBC 12 News*	0.847	0.802	0.802	0.813	0.821	0.836	0.870	0.852	0.763	0.877	0.875	0.819
CIFG16B15Mp28	*NBC 12 News*	0.846	0.807	0.803	0.811	0.821	0.838	0.854	0.843	0.775	0.870	0.878	0.826

TABLE LVIII: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG12B2Mp01	*Sony Demo*	0.993	0.891	0.837	0.803	0.797	0.819	0.759	0.889	0.593	0.580	0.559	0.737
CIFG12B2Mp02	*Sony Demo*	0.948	0.881	0.824	0.789	0.782	0.811	0.738	0.819	0.559	0.573	0.587	0.737

TABLE LVIII: *continued*

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG12B2Mp04	*Sony Demo*	0.891	0.880	0.827	0.805	0.799	0.844	0.679	0.797	0.460	0.482	0.625	0.723
CIFG12B2Mp08	*Sony Demo*	0.835	0.895	0.847	0.820	0.790	0.798	0.612	0.764	0.446	0.378	0.536	0.638
CIFG12B2Mp12	*Sony Demo*	0.814	0.903	0.861	0.823	0.786	0.787	0.584	0.760	0.552	0.358	0.449	0.680
CIFG12B2Mp16	*Sony Demo*	0.807	0.893	0.849	0.821	0.789	0.795	0.633	0.765	0.658	0.554	0.495	0.788
CIFG12B2Mp20	*Sony Demo*	0.809	0.885	0.841	0.813	0.795	0.808	0.664	0.800	0.694	0.648	0.541	0.869
CIFG12B2Mp24	*Sony Demo*	0.815	0.881	0.834	0.811	0.797	0.813	0.680	0.830	0.709	0.671	0.568	0.833
CIFG12B2Mp28	*Sony Demo*	0.829	0.873	0.828	0.807	0.793	0.821	0.692	0.851	0.641	0.684	0.611	0.793
CIFG12B2Mp01	*Silence of the Lambs*	1.000	0.931	0.920	0.921	0.911	0.905	0.880	0.945	0.919	0.879	0.953	0.946
CIFG12B2Mp02	*Silence of the Lambs*	0.957	0.915	0.904	0.922	0.904	0.910	0.859	0.933	0.895	0.856	0.945	0.903
CIFG12B2Mp04	*Silence of the Lambs*	0.930	0.905	0.897	0.902	0.878	0.886	0.853	0.928	0.877	0.835	0.921	0.860
CIFG12B2Mp08	*Silence of the Lambs*	0.906	0.887	0.883	0.880	0.860	0.862	0.831	0.913	0.849	0.803	0.903	0.811
CIFG12B2Mp12	*Silence of the Lambs*	0.895	0.881	0.883	0.875	0.858	0.857	0.825	0.891	0.828	0.789	0.888	0.797
CIFG12B2Mp16	*Silence of the Lambs*	0.890	0.873	0.880	0.871	0.855	0.849	0.822	0.879	0.805	0.779	0.867	0.793
CIFG12B2Mp20	*Silence of the Lambs*	0.886	0.869	0.872	0.865	0.847	0.840	0.825	0.866	0.788	0.778	0.854	0.792
CIFG12B2Mp24	*Silence of the Lambs*	0.886	0.866	0.870	0.863	0.851	0.833	0.816	0.849	0.773	0.772	0.838	0.790
CIFG12B2Mp28	*Silence of the Lambs*	0.882	0.864	0.867	0.866	0.844	0.828	0.810	0.835	0.765	0.771	0.823	0.786

TABLE LIX: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B1Mp01	*Sony Demo*	1.321	1.370	1.415	1.251	1.421	1.310	1.382	0.952	1.030	1.002	0.945
CIFG16B1Mp02	*Sony Demo*	1.227	1.330	1.381	1.320	1.413	1.236	1.191	1.048	1.049	1.175	1.298
CIFG16B1Mp04	*Sony Demo*	1.172	1.271	1.380	1.377	1.399	1.290	1.156	1.075	1.107	1.229	1.719
CIFG16B1Mp08	*Sony Demo*	1.127	1.209	1.368	1.430	1.421	1.322	1.158	1.080	1.182	1.454	1.525
CIFG16B1Mp12	*Sony Demo*	1.102	1.165	1.324	1.381	1.451	1.334	1.174	1.071	1.232	1.467	1.443
CIFG16B1Mp16	*Sony Demo*	1.082	1.129	1.273	1.283	1.478	1.311	1.191	1.073	1.288	1.456	1.442
CIFG16B1Mp20	*Sony Demo*	1.085	1.128	1.255	1.268	1.502	1.298	1.153	1.078	1.271	1.488	1.458
CIFG16B1Mp24	*Sony Demo*	1.085	1.119	1.242	1.259	1.565	1.268	1.137	1.102	1.232	1.552	1.545
CIFG16B1Mp28	*Sony Demo*	1.092	1.117	1.233	1.254	1.510	1.254	1.136	1.139	1.224	1.530	1.649
CIFG16B1Mp01	*Silence of the Lambs*	1.247	1.094	0.857	1.039	1.096	1.044	1.035	0.999	1.030	1.078	1.190
CIFG16B1Mp02	*Silence of the Lambs*	1.176	1.151	1.039	1.081	1.119	1.069	1.013	1.015	1.012	1.063	1.341
CIFG16B1Mp04	*Silence of the Lambs*	1.123	1.146	1.085	1.067	1.092	1.089	0.985	0.972	0.968	1.026	1.331
CIFG16B1Mp08	*Silence of the Lambs*	1.087	1.141	1.080	1.047	1.090	1.067	0.975	0.941	0.962	1.013	1.232
CIFG16B1Mp12	*Silence of the Lambs*	1.073	1.131	1.066	1.042	1.084	1.024	0.965	0.918	0.961	0.989	1.203
CIFG16B1Mp16	*Silence of the Lambs*	1.074	1.131	1.058	1.030	1.077	0.995	0.954	0.907	0.945	0.970	1.153
CIFG16B1Mp20	*Silence of the Lambs*	1.069	1.122	1.051	1.016	1.077	0.977	0.947	0.897	0.937	0.959	1.141
CIFG16B1Mp24	*Silence of the Lambs*	1.067	1.124	1.055	1.009	1.067	0.969	0.946	0.886	0.923	0.952	1.108
CIFG16B1Mp28	*Silence of the Lambs*	1.068	1.122	1.050	1.002	1.054	0.970	0.947	0.883	0.920	0.951	1.110
CIFG16B1Mp01	*Star Wars 4*	1.196	0.992	0.934	0.811	0.972	0.939	0.982	1.009	0.977	0.813	0.684
CIFG16B1Mp02	*Star Wars 4*	1.126	1.074	1.017	0.955	0.940	0.931	0.910	0.989	1.072	1.046	0.779
CIFG16B1Mp04	*Star Wars 4*	1.087	1.070	1.023	0.971	0.929	0.922	0.907	0.954	1.036	0.984	0.793
CIFG16B1Mp08	*Star Wars 4*	1.041	1.035	0.988	0.947	0.916	0.888	0.856	0.991	0.946	0.906	0.849
CIFG16B1Mp12	*Star Wars 4*	1.012	1.013	0.962	0.921	0.883	0.864	0.806	0.924	0.888	0.842	0.723
CIFG16B1Mp16	*Star Wars 4*	0.997	1.004	0.947	0.902	0.872	0.841	0.781	0.872	0.830	0.798	0.662
CIFG16B1Mp20	*Star Wars 4*	0.984	0.987	0.927	0.893	0.861	0.830	0.739	0.849	0.799	0.771	0.633
CIFG16B1Mp24	*Star Wars 4*	0.989	1.004	0.946	0.923	0.902	0.866	0.791	0.873	0.813	0.752	0.685
CIFG16B1Mp28	*Star Wars 4*	0.990	1.005	0.943	0.913	0.899	0.873	0.795	0.878	0.819	0.768	0.694
CIFG16B1Mp01	*Tokyo Olympics*	1.251	1.216	1.210	1.154	1.095	1.050	1.095	1.022	1.108	1.103	1.099
CIFG16B1Mp02	*Tokyo Olympics*	1.216	1.215	1.182	1.130	1.064	1.020	1.026	1.003	1.095	1.053	1.006
CIFG16B1Mp04	*Tokyo Olympics*	1.186	1.195	1.160	1.093	1.038	0.978	0.972	0.984	1.007	0.942	0.920
CIFG16B1Mp08	*Tokyo Olympics*	1.147	1.160	1.113	1.057	1.024	0.960	0.964	0.994	0.961	0.918	0.908
CIFG16B1Mp12	*Tokyo Olympics*	1.123	1.136	1.097	1.041	0.990	0.942	0.946	0.973	0.915	0.895	0.881
CIFG16B1Mp16	*Tokyo Olympics*	1.114	1.123	1.089	1.033	0.971	0.930	0.924	0.954	0.895	0.876	0.856
CIFG16B1Mp20	*Tokyo Olympics*	1.099	1.111	1.081	1.020	0.959	0.907	0.913	0.948	0.889	0.826	0.824
CIFG16B1Mp24	*Tokyo Olympics*	1.096	1.108	1.083	1.017	0.962	0.914	0.925	0.902	0.891	0.839	0.837
CIFG16B1Mp28	*Tokyo Olympics*	1.093	1.107	1.084	1.022	0.973	0.921	0.934	0.937	0.903	0.845	0.849
CIFG16B1Mp01	*NBC 12 News*	1.099	1.098	1.050	1.052	0.994	0.998	0.918	0.853	0.800	0.877	1.269
CIFG16B1Mp02	*NBC 12 News*	1.059	1.083	1.027	1.061	0.917	0.975	0.834	0.793	0.718	0.814	1.263
CIFG16B1Mp04	*NBC 12 News*	1.006	1.042	0.986	0.998	0.909	0.956	0.870	0.798	0.689	0.844	1.094
CIFG16B1Mp08	*NBC 12 News*	0.967	0.985	0.946	0.958	0.907	0.971	0.877	0.877	0.766	0.899	1.059
CIFG16B1Mp12	*NBC 12 News*	0.952	0.972	0.942	0.951	0.911	0.982	0.888	0.932	0.820	0.919	1.084
CIFG16B1Mp16	*NBC 12 News*	0.944	0.962	0.941	0.946	0.931	0.989	0.896	0.963	0.855	0.936	1.081
CIFG16B1Mp20	*NBC 12 News*	0.939	0.955	0.931	0.937	0.921	0.972	0.895	0.976	0.875	0.949	1.070
CIFG16B1Mp24	*NBC 12 News*	0.934	0.955	0.927	0.941	0.911	0.958	0.884	0.972	0.886	0.968	1.062
CIFG16B1Mp28	*NBC 12 News*	0.936	0.956	0.928	0.938	0.906	0.950	0.874	0.966	0.892	0.990	1.060

TABLE LX: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3Mp01	*Sony Demo*	1.298	1.346	1.365	1.217	1.396	1.367	1.370	1.006	1.074	1.062	0.982
CIFG16B3Mp02	*Sony Demo*	1.238	1.323	1.374	1.324	1.411	1.233	1.155	1.060	1.042	1.111	1.286
CIFG16B3Mp04	*Sony Demo*	1.187	1.290	1.366	1.386	1.400	1.288	1.127	1.098	1.109	1.373	1.666
CIFG16B3Mp08	*Sony Demo*	1.136	1.225	1.338	1.381	1.438	1.309	1.145	1.099	1.182	1.533	1.485
CIFG16B3Mp12	*Sony Demo*	1.111	1.188	1.279	1.340	1.453	1.332	1.170	1.079	1.233	1.457	1.401
CIFG16B3Mp16	*Sony Demo*	1.109	1.175	1.265	1.298	1.478	1.276	1.185	1.069	1.270	1.461	1.401
CIFG16B3Mp20	*Sony Demo*	1.102	1.164	1.258	1.277	1.474	1.212	1.123	1.077	1.281	1.493	1.402
CIFG16B3Mp24	*Sony Demo*	1.107	1.158	1.245	1.271	1.521	1.226	1.157	1.114	1.271	1.619	1.480
CIFG16B3Mp28	*Sony Demo*	1.107	1.150	1.244	1.275	1.450	1.233	1.180	1.165	1.273	1.625	1.523
CIFG16B3Mp01	*Silence of the Lambs*	1.239	1.119	0.902	1.047	1.115	1.065	1.058	1.030	1.026	1.093	1.198
CIFG16B3Mp02	*Silence of the Lambs*	1.171	1.160	1.056	1.073	1.129	1.082	1.018	1.033	1.017	1.078	1.342
CIFG16B3Mp04	*Silence of the Lambs*	1.124	1.156	1.092	1.072	1.110	1.095	0.996	0.975	0.970	1.025	1.315
CIFG16B3Mp08	*Silence of the Lambs*	1.092	1.148	1.088	1.040	1.084	1.057	0.957	0.925	0.942	0.988	1.174
CIFG16B3Mp12	*Silence of the Lambs*	1.072	1.130	1.064	1.038	1.070	1.004	0.939	0.913	0.930	0.974	1.153
CIFG16B3Mp16	*Silence of the Lambs*	1.073	1.126	1.058	1.012	1.068	0.989	0.927	0.910	0.911	0.961	1.139
CIFG16B3Mp20	*Silence of the Lambs*	1.074	1.107	1.043	0.991	1.049	0.976	0.922	0.899	0.906	0.947	1.175
CIFG16B3Mp24	*Silence of the Lambs*	1.074	1.115	1.045	0.992	1.036	0.979	0.920	0.902	0.890	0.945	1.101
CIFG16B3Mp28	*Silence of the Lambs*	1.062	1.108	1.029	0.985	1.025	0.984	0.928	0.906	0.890	0.946	1.064
CIFG16B3Mp01	*Star Wars 4*	1.186	1.015	0.950	0.861	0.952	0.947	0.960	1.029	0.999	0.853	0.685
CIFG16B3Mp02	*Star Wars 4*	1.122	1.064	1.019	0.937	0.932	0.905	0.888	0.971	1.076	1.015	0.781
CIFG16B3Mp04	*Star Wars 4*	1.079	1.065	1.017	0.942	0.900	0.885	0.877	0.944	1.003	0.964	0.820
CIFG16B3Mp08	*Star Wars 4*	1.027	1.035	0.978	0.922	0.900	0.878	0.833	0.951	0.942	0.920	0.793
CIFG16B3Mp12	*Star Wars 4*	1.000	1.015	0.968	0.925	0.913	0.870	0.818	0.915	0.896	0.864	0.708
CIFG16B3Mp16	*Star Wars 4*	0.985	1.009	0.960	0.929	0.893	0.883	0.884	0.900	0.831	0.811	0.682
CIFG16B3Mp20	*Star Wars 4*	0.969	0.982	0.942	0.899	0.889	0.883	0.831	0.898	0.865	0.803	0.688
CIFG16B3Mp24	*Star Wars 4*	0.977	1.012	0.969	0.938	0.928	0.920	0.879	0.956	0.895	0.834	0.736
CIFG16B3Mp28	*Star Wars 4*	0.976	1.006	0.957	0.924	0.916	0.928	0.890	0.968	0.896	0.872	0.752
CIFG16B3Mp01	*Tokyo Olympics*	1.246	1.221	1.207	1.154	1.091	1.050	1.088	1.017	1.106	1.104	1.097
CIFG16B3Mp02	*Tokyo Olympics*	1.224	1.224	1.185	1.133	1.063	1.016	1.028	0.994	1.078	1.025	1.007
CIFG16B3Mp04	*Tokyo Olympics*	1.194	1.208	1.163	1.104	1.037	0.979	0.972	0.984	1.012	0.934	0.922
CIFG16B3Mp08	*Tokyo Olympics*	1.151	1.175	1.124	1.063	1.020	0.954	0.966	1.003	0.964	0.925	0.906
CIFG16B3Mp12	*Tokyo Olympics*	1.125	1.149	1.102	1.042	0.971	0.934	0.927	0.982	0.917	0.915	0.882
CIFG16B3Mp16	*Tokyo Olympics*	1.110	1.137	1.093	1.034	0.967	0.922	0.920	0.952	0.902	0.869	0.862
CIFG16B3Mp20	*Tokyo Olympics*	1.098	1.130	1.090	1.029	0.965	0.911	0.904	0.939	0.890	0.812	0.824
CIFG16B3Mp24	*Tokyo Olympics*	1.095	1.128	1.098	1.037	0.979	0.923	0.932	0.929	0.910	0.859	0.852
CIFG16B3Mp28	*Tokyo Olympics*	1.091	1.128	1.098	1.041	0.992	0.937	0.941	0.947	0.917	0.872	0.866
CIFG16B3Mp01	*NBC 12 News*	1.101	1.095	1.035	1.022	0.945	0.979	0.895	0.832	0.747	0.849	1.243
CIFG16B3Mp02	*NBC 12 News*	1.070	1.081	1.023	1.047	0.906	0.962	0.817	0.773	0.705	0.818	1.195
CIFG16B3Mp04	*NBC 12 News*	1.013	1.039	0.986	0.991	0.905	0.950	0.865	0.811	0.698	0.862	1.077
CIFG16B3Mp08	*NBC 12 News*	0.966	0.980	0.938	0.961	0.904	0.954	0.863	0.884	0.774	0.920	1.069
CIFG16B3Mp12	*NBC 12 News*	0.957	0.973	0.943	0.963	0.917	0.955	0.870	0.933	0.826	0.939	1.159
CIFG16B3Mp16	*NBC 12 News*	0.951	0.957	0.940	0.976	0.928	0.967	0.880	0.953	0.852	0.951	1.102
CIFG16B3Mp20	*NBC 12 News*	0.946	0.953	0.938	0.978	0.924	0.943	0.882	0.963	0.864	0.958	1.086
CIFG16B3Mp24	*NBC 12 News*	0.941	0.951	0.941	0.970	0.923	0.925	0.870	0.954	0.871	0.978	1.084
CIFG16B3Mp28	*NBC 12 News*	0.940	0.953	0.938	0.957	0.917	0.913	0.859	0.946	0.870	1.002	1.091

TABLE LXI: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7Mp01	*Sony Demo*	1.285	1.346	1.329	1.233	1.373	1.410	1.434	1.030	1.073	1.063	1.022
CIFG16B7Mp02	*Sony Demo*	1.213	1.324	1.354	1.345	1.438	1.334	1.186	1.078	1.067	1.096	1.423
CIFG16B7Mp04	*Sony Demo*	1.174	1.290	1.354	1.387	1.370	1.352	1.182	1.123	1.144	1.342	1.617
CIFG16B7Mp08	*Sony Demo*	1.144	1.237	1.333	1.394	1.414	1.464	1.225	1.120	1.198	1.383	1.393
CIFG16B7Mp12	*Sony Demo*	1.126	1.209	1.306	1.334	1.445	1.350	1.182	1.092	1.238	1.395	1.313
CIFG16B7Mp16	*Sony Demo*	1.132	1.210	1.279	1.336	1.488	1.319	1.138	1.073	1.199	1.397	1.302
CIFG16B7Mp20	*Sony Demo*	1.163	1.215	1.283	1.313	1.514	1.278	1.092	1.079	1.176	1.440	1.298
CIFG16B7Mp24	*Sony Demo*	1.189	1.222	1.278	1.325	1.451	1.273	1.192	1.117	1.182	1.603	1.397
CIFG16B7Mp28	*Sony Demo*	1.199	1.239	1.283	1.295	1.386	1.259	1.155	1.113	1.206	1.398	1.418
CIFG16B7Mp01	*Silence of the Lambs*	1.243	1.133	0.934	1.057	1.104	1.061	1.078	1.036	1.033	1.088	1.210
CIFG16B7Mp02	*Silence of the Lambs*	1.180	1.156	1.066	1.077	1.128	1.087	1.032	1.031	1.028	1.059	1.299
CIFG16B7Mp04	*Silence of the Lambs*	1.128	1.157	1.094	1.089	1.131	1.100	1.033	0.977	0.991	0.997	1.302
CIFG16B7Mp08	*Silence of the Lambs*	1.087	1.140	1.082	1.055	1.085	1.046	0.939	0.910	0.906	0.945	1.109
CIFG16B7Mp12	*Silence of the Lambs*	1.047	1.096	1.054	1.021	1.073	1.008	0.885	0.953	0.897	0.952	1.099
CIFG16B7Mp16	*Silence of the Lambs*	1.044	1.097	1.050	1.008	1.060	0.994	0.887	0.953	0.868	0.964	1.180
CIFG16B7Mp20	*Silence of the Lambs*	1.047	1.081	1.031	0.983	1.045	0.968	0.889	0.919	0.866	0.945	1.092

TABLE LXI: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B7Mp24	*Silence of the Lambs*	1.058	1.098	1.053	0.994	1.003	0.966	0.870	0.925	0.855	0.922	1.029
CIFG16B7Mp28	*Silence of the Lambs*	1.063	1.085	1.038	1.003	0.995	0.943	0.857	0.959	0.867	0.939	1.028
CIFG16B7Mp01	*Star Wars 4*	1.165	1.044	0.968	0.914	0.953	0.958	0.963	1.032	1.042	0.892	0.687
CIFG16B7Mp02	*Star Wars 4*	1.126	1.066	1.020	0.937	0.897	0.894	0.877	0.964	1.041	1.004	0.792
CIFG16B7Mp04	*Star Wars 4*	1.087	1.062	1.000	0.934	0.867	0.868	0.858	0.993	0.978	0.965	0.832
CIFG16B7Mp08	*Star Wars 4*	1.047	1.025	0.975	0.925	0.875	0.888	0.826	0.966	0.980	0.936	0.780
CIFG16B7Mp12	*Star Wars 4*	1.025	1.010	0.966	0.919	0.906	0.905	0.818	0.945	0.951	0.858	0.676
CIFG16B7Mp16	*Star Wars 4*	1.007	1.002	0.962	0.934	0.933	0.942	0.875	0.979	0.950	0.817	0.648
CIFG16B7Mp20	*Star Wars 4*	0.973	0.966	0.931	0.889	0.885	0.901	0.867	0.926	0.941	0.783	0.632
CIFG16B7Mp24	*Star Wars 4*	1.004	1.010	0.978	0.960	0.965	0.980	0.969	1.070	0.967	0.868	0.773
CIFG16B7Mp28	*Star Wars 4*	1.004	0.996	0.962	0.947	0.963	0.978	1.008	1.074	0.969	0.874	0.789
CIFG16B7Mp01	*Tokyo Olympics*	1.236	1.221	1.209	1.154	1.092	1.052	1.088	1.018	1.102	1.110	1.102
CIFG16B7Mp02	*Tokyo Olympics*	1.224	1.225	1.181	1.131	1.065	1.010	1.018	0.989	1.071	1.007	1.006
CIFG16B7Mp04	*Tokyo Olympics*	1.202	1.213	1.157	1.097	1.047	0.986	0.965	0.966	0.998	0.922	0.921
CIFG16B7Mp08	*Tokyo Olympics*	1.171	1.180	1.129	1.069	1.013	0.957	0.948	0.976	0.953	0.917	0.909
CIFG16B7Mp12	*Tokyo Olympics*	1.141	1.153	1.115	1.046	0.978	0.926	0.909	0.966	0.918	0.901	0.897
CIFG16B7Mp16	*Tokyo Olympics*	1.130	1.144	1.108	1.035	0.973	0.920	0.917	0.952	0.904	0.873	0.889
CIFG16B7Mp20	*Tokyo Olympics*	1.110	1.134	1.112	1.035	0.967	0.913	0.921	0.941	0.885	0.843	0.860
CIFG16B7Mp24	*Tokyo Olympics*	1.108	1.142	1.117	1.049	0.984	0.909	0.956	0.927	0.876	0.860	0.875
CIFG16B7Mp28	*Tokyo Olympics*	1.104	1.141	1.118	1.042	0.991	0.912	0.972	0.930	0.884	0.866	0.870
CIFG16B7Mp01	*NBC 12 News*	1.095	1.082	1.017	1.012	0.916	0.974	0.869	0.810	0.748	0.837	1.185
CIFG16B7Mp02	*NBC 12 News*	1.076	1.070	1.014	1.032	0.888	0.966	0.839	0.765	0.678	0.832	1.123
CIFG16B7Mp04	*NBC 12 News*	1.023	1.026	0.986	0.992	0.891	0.966	0.857	0.807	0.694	0.873	1.032
CIFG16B7Mp08	*NBC 12 News*	0.987	0.999	0.959	0.977	0.892	0.972	0.848	0.861	0.765	0.924	1.036
CIFG16B7Mp12	*NBC 12 News*	0.983	0.992	0.957	0.976	0.907	0.966	0.854	0.906	0.813	0.944	1.117
CIFG16B7Mp16	*NBC 12 News*	0.980	0.998	0.967	0.986	0.930	0.969	0.863	0.926	0.834	0.945	1.087
CIFG16B7Mp20	*NBC 12 News*	0.974	0.994	0.975	0.984	0.933	0.946	0.873	0.930	0.843	0.934	1.085
CIFG16B7Mp24	*NBC 12 News*	0.965	0.987	0.963	0.983	0.918	0.918	0.873	0.907	0.846	0.935	1.084
CIFG16B7Mp28	*NBC 12 News*	0.956	0.978	0.949	0.977	0.905	0.896	0.886	0.898	0.835	0.963	1.038

TABLE LXII: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B15Mp01	*Sony Demo*	1.243	1.313	1.331	1.198	1.367	1.361	1.462	1.046	1.110	1.077	1.056
CIFG16B15Mp02	*Sony Demo*	1.165	1.288	1.342	1.347	1.391	1.298	1.190	1.074	1.085	1.011	1.503
CIFG16B15Mp04	*Sony Demo*	1.123	1.243	1.316	1.369	1.351	1.340	1.185	1.120	1.156	1.192	1.455
CIFG16B15Mp08	*Sony Demo*	1.110	1.224	1.317	1.373	1.395	1.316	1.209	1.095	1.159	1.375	1.313
CIFG16B15Mp12	*Sony Demo*	1.127	1.200	1.300	1.339	1.481	1.248	1.138	1.048	1.184	1.392	1.213
CIFG16B15Mp16	*Sony Demo*	1.154	1.243	1.284	1.380	1.458	1.258	1.082	1.025	1.136	1.430	1.196
CIFG16B15Mp20	*Sony Demo*	1.207	1.259	1.311	1.366	1.546	1.286	1.046	1.086	1.121	1.513	1.184
CIFG16B15Mp24	*Sony Demo*	1.280	1.325	1.337	1.377	1.483	1.350	1.104	1.078	1.139	1.528	1.469
CIFG16B15Mp28	*Sony Demo*	1.276	1.282	1.294	1.280	1.348	1.337	1.074	0.992	1.273	1.384	1.408
CIFG16B15Mp01	*Silence of the Lambs*	1.220	1.150	0.962	1.045	1.095	1.059	1.072	1.042	1.041	1.089	1.208
CIFG16B15Mp02	*Silence of the Lambs*	1.163	1.158	1.076	1.079	1.096	1.098	1.056	1.037	1.031	1.046	1.273
CIFG16B15Mp04	*Silence of the Lambs*	1.145	1.162	1.107	1.065	1.135	1.069	1.031	0.978	0.983	0.991	1.198
CIFG16B15Mp08	*Silence of the Lambs*	1.134	1.147	1.096	1.038	1.076	0.963	0.860	0.882	0.922	0.887	1.024
CIFG16B15Mp12	*Silence of the Lambs*	1.130	1.122	1.081	1.037	1.070	0.920	0.781	0.862	0.908	0.842	1.002
CIFG16B15Mp16	*Silence of the Lambs*	1.154	1.140	1.045	1.008	1.035	0.867	0.706	0.875	0.871	0.852	1.022
CIFG16B15Mp20	*Silence of the Lambs*	1.152	1.125	1.049	0.983	1.025	0.884	0.707	0.800	0.867	0.827	0.999
CIFG16B15Mp24	*Silence of the Lambs*	1.162	1.161	1.089	1.013	0.992	0.856	0.739	0.895	0.924	0.895	1.045
CIFG16B15Mp28	*Silence of the Lambs*	1.152	1.143	1.034	1.006	1.039	0.883	0.779	0.915	0.975	0.937	1.079
CIFG16B15Mp01	*Star Wars 4*	1.166	1.049	0.972	0.945	0.953	0.966	0.965	1.041	1.081	0.916	0.681
CIFG16B15Mp02	*Star Wars 4*	1.128	1.071	1.012	0.926	0.890	0.874	0.858	0.949	1.013	0.984	0.773
CIFG16B15Mp04	*Star Wars 4*	1.093	1.052	0.987	0.900	0.856	0.834	0.854	0.988	0.961	0.958	0.816
CIFG16B15Mp08	*Star Wars 4*	1.075	1.035	0.973	0.896	0.878	0.882	0.825	0.949	0.989	0.900	0.750
CIFG16B15Mp12	*Star Wars 4*	1.081	1.038	0.984	0.913	0.937	0.913	0.900	1.081	0.950	0.924	0.709
CIFG16B15Mp16	*Star Wars 4*	1.074	1.032	0.967	0.916	0.957	0.925	0.932	1.067	0.908	0.882	0.666
CIFG16B15Mp20	*Star Wars 4*	1.065	0.999	0.956	0.887	0.930	0.912	0.962	1.000	0.977	0.811	0.654
CIFG16B15Mp24	*Star Wars 4*	1.094	1.065	1.001	0.959	1.020	1.076	1.032	1.039	0.980	0.883	0.809
CIFG16B15Mp28	*Star Wars 4*	1.094	1.055	1.008	0.965	1.004	1.056	1.089	1.045	0.967	0.845	0.769
CIFG16B15Mp01	*NBC 12 News*	1.070	1.079	1.001	0.995	0.893	0.987	0.844	0.789	0.741	0.844	1.136
CIFG16B15Mp02	*NBC 12 News*	1.056	1.064	1.004	0.991	0.876	0.970	0.841	0.782	0.693	0.859	1.070
CIFG16B15Mp04	*NBC 12 News*	1.016	1.026	0.972	0.976	0.867	0.996	0.837	0.818	0.701	0.892	0.972
CIFG16B15Mp08	*NBC 12 News*	1.000	1.000	0.968	0.990	0.889	1.025	0.827	0.875	0.753	0.934	0.984
CIFG16B15Mp12	*NBC 12 News*	1.014	1.002	0.980	0.992	0.913	0.991	0.850	0.910	0.793	0.935	1.033
CIFG16B15Mp16	*NBC 12 News*	1.011	0.998	0.972	1.006	0.918	1.006	0.870	0.927	0.810	0.917	1.026

TABLE LXII: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B15Mp20	*NBC 12 News*	1.012	0.989	0.976	1.004	0.918	1.003	0.886	0.905	0.816	0.899	1.017
CIFG16B15Mp24	*NBC 12 News*	1.017	0.980	0.957	0.987	0.897	0.966	0.872	0.881	0.818	0.864	0.974
CIFG16B15Mp28	*NBC 12 News*	1.020	0.987	0.959	0.984	0.907	0.969	0.888	0.875	0.811	0.858	0.962

TABLE LXIII: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG12B2Mp01	*Sony Demo*	1.238	1.381	1.385	1.238	1.404	1.175	1.235	1.282	0.803	1.109	1.072
CIFG12B2Mp02	*Sony Demo*	1.151	1.314	1.384	1.343	1.423	1.165	1.131	1.275	0.982	1.249	1.184
CIFG12B2Mp04	*Sony Demo*	1.091	1.268	1.373	1.379	1.420	1.240	1.159	1.268	1.087	1.402	1.421
CIFG12B2Mp08	*Sony Demo*	1.047	1.231	1.319	1.381	1.445	1.286	1.248	1.200	1.196	1.900	1.538
CIFG12B2Mp12	*Sony Demo*	1.022	1.190	1.286	1.344	1.458	1.206	1.390	1.156	1.255	1.654	1.375
CIFG12B2Mp16	*Sony Demo*	1.015	1.155	1.260	1.279	1.481	1.168	1.263	1.152	1.273	1.718	1.347
CIFG12B2Mp20	*Sony Demo*	1.022	1.151	1.240	1.269	1.449	1.119	1.189	1.165	1.269	1.782	1.332
CIFG12B2Mp24	*Sony Demo*	1.034	1.154	1.243	1.256	1.469	1.095	1.153	1.188	1.269	1.790	1.394
CIFG12B2Mp28	*Sony Demo*	1.043	1.162	1.240	1.263	1.463	1.069	1.139	1.197	1.280	1.763	1.452
CIFG12B2Mp01	*Silence of the Lambs*	1.267	1.196	0.912	1.049	1.113	1.014	1.052	1.102	1.114	1.161	1.127
CIFG12B2Mp02	*Silence of the Lambs*	1.165	1.172	1.057	1.061	1.110	1.102	1.040	1.051	1.110	1.203	1.149
CIFG12B2Mp04	*Silence of the Lambs*	1.106	1.147	1.101	1.060	1.096	1.112	1.018	1.014	1.094	1.178	1.141
CIFG12B2Mp08	*Silence of the Lambs*	1.072	1.119	1.094	1.038	1.074	1.065	1.007	0.952	1.060	1.135	1.138
CIFG12B2Mp12	*Silence of the Lambs*	1.055	1.100	1.068	1.015	1.069	1.022	0.990	0.944	0.987	1.089	1.137
CIFG12B2Mp16	*Silence of the Lambs*	1.049	1.097	1.058	0.996	1.058	1.010	0.979	0.951	0.959	1.066	1.143
CIFG12B2Mp20	*Silence of the Lambs*	1.049	1.094	1.046	0.987	1.050	1.001	0.956	0.920	0.947	1.061	1.161
CIFG12B2Mp24	*Silence of the Lambs*	1.049	1.096	1.048	0.984	1.031	0.997	0.961	0.915	0.934	1.027	1.150
CIFG12B2Mp28	*Silence of the Lambs*	1.043	1.091	1.036	0.973	1.016	0.991	0.943	0.901	0.940	1.034	1.177

TABLE LXIV: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B1Mp01	*Sony Demo*	0.769
CIFG16B1Mp02	*Sony Demo*	0.721
CIFG16B1Mp04	*Sony Demo*	0.687
CIFG16B1Mp08	*Sony Demo*	0.674
CIFG16B1Mp12	*Sony Demo*	0.705
CIFG16B1Mp16	*Sony Demo*	0.741
CIFG16B1Mp20	*Sony Demo*	0.768
CIFG16B1Mp24	*Sony Demo*	0.785
CIFG16B1Mp28	*Sony Demo*	0.793
CIFG16B1Mp01	*Silence of the Lambs*	0.828
CIFG16B1Mp02	*Silence of the Lambs*	0.843
CIFG16B1Mp04	*Silence of the Lambs*	0.837
CIFG16B1Mp08	*Silence of the Lambs*	0.822
CIFG16B1Mp12	*Silence of the Lambs*	0.800
CIFG16B1Mp16	*Silence of the Lambs*	0.772
CIFG16B1Mp20	*Silence of the Lambs*	0.747
CIFG16B1Mp24	*Silence of the Lambs*	0.722
CIFG16B1Mp28	*Silence of the Lambs*	0.707
CIFG16B1Mp01	*Star Wars 4*	0.212
CIFG16B1Mp02	*Star Wars 4*	0.603
CIFG16B1Mp04	*Star Wars 4*	0.669
CIFG16B1Mp08	*Star Wars 4*	0.702
CIFG16B1Mp12	*Star Wars 4*	0.700
CIFG16B1Mp16	*Star Wars 4*	0.680
CIFG16B1Mp20	*Star Wars 4*	0.663
CIFG16B1Mp24	*Star Wars 4*	0.616
CIFG16B1Mp28	*Star Wars 4*	0.585
CIFG16B1Mp01	*Tokyo Olympics*	0.814
CIFG16B1Mp02	*Tokyo Olympics*	0.842
CIFG16B1Mp04	*Tokyo Olympics*	0.850
CIFG16B1Mp08	*Tokyo Olympics*	0.846
CIFG16B1Mp12	*Tokyo Olympics*	0.837
CIFG16B1Mp16	*Tokyo Olympics*	0.826
CIFG16B1Mp20	*Tokyo Olympics*	0.815

TABLE LXIV: *continued*

Enc. M.	Video	VT H
CIFG16B1Mp24	*Tokyo Olympics*	0.805
CIFG16B1Mp28	*Tokyo Olympics*	0.798
CIFG16B1Mp01	*NBC 12 News*	0.464
CIFG16B1Mp02	*NBC 12 News*	0.440
CIFG16B1Mp04	*NBC 12 News*	0.506
CIFG16B1Mp08	*NBC 12 News*	0.580
CIFG16B1Mp12	*NBC 12 News*	0.636
CIFG16B1Mp16	*NBC 12 News*	0.679
CIFG16B1Mp20	*NBC 12 News*	0.710
CIFG16B1Mp24	*NBC 12 News*	0.731
CIFG16B1Mp28	*NBC 12 News*	0.747

TABLE LXV: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B3Mp01	*Sony Demo*	0.772
CIFG16B3Mp02	*Sony Demo*	0.722
CIFG16B3Mp04	*Sony Demo*	0.688
CIFG16B3Mp08	*Sony Demo*	0.694
CIFG16B3Mp12	*Sony Demo*	0.734
CIFG16B3Mp16	*Sony Demo*	0.767
CIFG16B3Mp20	*Sony Demo*	0.787
CIFG16B3Mp24	*Sony Demo*	0.799
CIFG16B3Mp28	*Sony Demo*	0.803
CIFG16B3Mp01	*Silence of the Lambs*	0.829
CIFG16B3Mp02	*Silence of the Lambs*	0.839
CIFG16B3Mp04	*Silence of the Lambs*	0.831
CIFG16B3Mp08	*Silence of the Lambs*	0.811
CIFG16B3Mp12	*Silence of the Lambs*	0.785
CIFG16B3Mp16	*Silence of the Lambs*	0.750
CIFG16B3Mp20	*Silence of the Lambs*	0.716
CIFG16B3Mp24	*Silence of the Lambs*	0.681
CIFG16B3Mp28	*Silence of the Lambs*	0.663
CIFG16B3Mp01	*Star Wars 4*	0.348
CIFG16B3Mp02	*Star Wars 4*	0.636
CIFG16B3Mp04	*Star Wars 4*	0.697
CIFG16B3Mp08	*Star Wars 4*	0.726
CIFG16B3Mp12	*Star Wars 4*	0.710
CIFG16B3Mp16	*Star Wars 4*	0.683
CIFG16B3Mp20	*Star Wars 4*	0.675
CIFG16B3Mp24	*Star Wars 4*	0.594
CIFG16B3Mp28	*Star Wars 4*	0.557
CIFG16B3Mp01	*Tokyo Olympics*	0.818
CIFG16B3Mp02	*Tokyo Olympics*	0.844
CIFG16B3Mp04	*Tokyo Olympics*	0.852
CIFG16B3Mp08	*Tokyo Olympics*	0.848
CIFG16B3Mp12	*Tokyo Olympics*	0.840
CIFG16B3Mp16	*Tokyo Olympics*	0.829
CIFG16B3Mp20	*Tokyo Olympics*	0.818
CIFG16B3Mp24	*Tokyo Olympics*	0.808
CIFG16B3Mp28	*Tokyo Olympics*	0.801
CIFG16B3Mp01	*NBC 12 News*	0.431
CIFG16B3Mp02	*NBC 12 News*	0.440
CIFG16B3Mp04	*NBC 12 News*	0.515
CIFG16B3Mp08	*NBC 12 News*	0.595
CIFG16B3Mp12	*NBC 12 News*	0.652
CIFG16B3Mp16	*NBC 12 News*	0.694
CIFG16B3Mp20	*NBC 12 News*	0.722
CIFG16B3Mp24	*NBC 12 News*	0.741
CIFG16B3Mp28	*NBC 12 News*	0.754

TABLE LXVI: *continued*

Enc. M.	Video	VT H

TABLE LXVI: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B7Mp01	*Sony Demo*	0.772
CIFG16B7Mp02	*Sony Demo*	0.720
CIFG16B7Mp04	*Sony Demo*	0.695
CIFG16B7Mp08	*Sony Demo*	0.724
CIFG16B7Mp12	*Sony Demo*	0.764
CIFG16B7Mp16	*Sony Demo*	0.791
CIFG16B7Mp20	*Sony Demo*	0.803
CIFG16B7Mp24	*Sony Demo*	0.814
CIFG16B7Mp28	*Sony Demo*	0.813
CIFG16B7Mp01	*Silence of the Lambs*	0.831
CIFG16B7Mp02	*Silence of the Lambs*	0.837
CIFG16B7Mp04	*Silence of the Lambs*	0.827
CIFG16B7Mp08	*Silence of the Lambs*	0.800
CIFG16B7Mp12	*Silence of the Lambs*	0.771
CIFG16B7Mp16	*Silence of the Lambs*	0.724
CIFG16B7Mp20	*Silence of the Lambs*	0.676
CIFG16B7Mp24	*Silence of the Lambs*	0.615
CIFG16B7Mp28	*Silence of the Lambs*	0.593
CIFG16B7Mp01	*Star Wars 4*	0.349
CIFG16B7Mp02	*Star Wars 4*	0.650
CIFG16B7Mp04	*Star Wars 4*	0.718
CIFG16B7Mp08	*Star Wars 4*	0.757
CIFG16B7Mp12	*Star Wars 4*	0.729
CIFG16B7Mp16	*Star Wars 4*	0.699
CIFG16B7Mp20	*Star Wars 4*	0.709
CIFG16B7Mp24	*Star Wars 4*	0.585
CIFG16B7Mp28	*Star Wars 4*	0.545
CIFG16B7Mp01	*Tokyo Olympics*	0.821
CIFG16B7Mp02	*Tokyo Olympics*	0.846
CIFG16B7Mp04	*Tokyo Olympics*	0.853
CIFG16B7Mp08	*Tokyo Olympics*	0.850
CIFG16B7Mp12	*Tokyo Olympics*	0.844
CIFG16B7Mp16	*Tokyo Olympics*	0.834
CIFG16B7Mp20	*Tokyo Olympics*	0.826
CIFG16B7Mp24	*Tokyo Olympics*	0.817
CIFG16B7Mp28	*Tokyo Olympics*	0.811
CIFG16B7Mp01	*NBC 12 News*	0.429
CIFG16B7Mp02	*NBC 12 News*	0.433
CIFG16B7Mp04	*NBC 12 News*	0.508
CIFG16B7Mp08	*NBC 12 News*	0.585
CIFG16B7Mp12	*NBC 12 News*	0.639
CIFG16B7Mp16	*NBC 12 News*	0.681
CIFG16B7Mp20	*NBC 12 News*	0.708
CIFG16B7Mp24	*NBC 12 News*	0.723
CIFG16B7Mp28	*NBC 12 News*	0.732

TABLE LXVII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B15Mp01	*Sony Demo*	0.771
CIFG16B15Mp02	*Sony Demo*	0.715
CIFG16B15Mp04	*Sony Demo*	0.688
CIFG16B15Mp08	*Sony Demo*	0.723
CIFG16B15Mp12	*Sony Demo*	0.762
CIFG16B15Mp16	*Sony Demo*	0.791
CIFG16B15Mp20	*Sony Demo*	0.803
CIFG16B15Mp24	*Sony Demo*	0.821
CIFG16B15Mp28	*Sony Demo*	0.813
CIFG16B15Mp01	*Silence of the Lambs*	0.832
CIFG16B15Mp02	*Silence of the Lambs*	0.837
CIFG16B15Mp04	*Silence of the Lambs*	0.827
CIFG16B15Mp08	*Silence of the Lambs*	0.794

TABLE LXVII: *continued*

Enc. M.	Video	VT H
CIFG16B15Mp12	*Silence of the Lambs*	0.758
CIFG16B15Mp16	*Silence of the Lambs*	0.659
CIFG16B15Mp20	*Silence of the Lambs*	0.605
CIFG16B15Mp24	*Silence of the Lambs*	0.466
CIFG16B15Mp28	*Silence of the Lambs*	0.503
CIFG16B15Mp01	*Star Wars 4*	0.326
CIFG16B15Mp02	*Star Wars 4*	0.657
CIFG16B15Mp04	*Star Wars 4*	0.741
CIFG16B15Mp08	*Star Wars 4*	0.792
CIFG16B15Mp12	*Star Wars 4*	0.753
CIFG16B15Mp16	*Star Wars 4*	0.727
CIFG16B15Mp20	*Star Wars 4*	0.709
CIFG16B15Mp24	*Star Wars 4*	0.610
CIFG16B15Mp28	*Star Wars 4*	0.565
CIFG16B15Mp01	*NBC 12 News*	0.447
CIFG16B15Mp02	*NBC 12 News*	0.434
CIFG16B15Mp04	*NBC 12 News*	0.507
CIFG16B15Mp08	*NBC 12 News*	0.579
CIFG16B15Mp12	*NBC 12 News*	0.622
CIFG16B15Mp16	*NBC 12 News*	0.658
CIFG16B15Mp20	*NBC 12 News*	0.675
CIFG16B15Mp24	*NBC 12 News*	0.679
CIFG16B15Mp28	*NBC 12 News*	0.674

TABLE LXVIII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG12B2Mp01	*Sony Demo*	0.513
CIFG12B2Mp02	*Sony Demo*	0.519
CIFG12B2Mp04	*Sony Demo*	0.524
CIFG12B2Mp08	*Sony Demo*	0.531
CIFG12B2Mp12	*Sony Demo*	0.548
CIFG12B2Mp16	*Sony Demo*	0.572
CIFG12B2Mp20	*Sony Demo*	0.596
CIFG12B2Mp24	*Sony Demo*	0.612
CIFG12B2Mp28	*Sony Demo*	0.620
CIFG12B2Mp01	*Silence of the Lambs*	0.890
CIFG12B2Mp02	*Silence of the Lambs*	0.896
CIFG12B2Mp04	*Silence of the Lambs*	0.884
CIFG12B2Mp08	*Silence of the Lambs*	0.860
CIFG12B2Mp12	*Silence of the Lambs*	0.835
CIFG12B2Mp16	*Silence of the Lambs*	0.804
CIFG12B2Mp20	*Silence of the Lambs*	0.774
CIFG12B2Mp24	*Silence of the Lambs*	0.746
CIFG12B2Mp28	*Silence of the Lambs*	0.730

C. H.264 SVC

TABLE LXIX: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B1SV10	*Sony Demo*	0.983	0.848	0.812	0.784	0.774	0.766	0.731	0.879	0.698	0.652	0.623	0.622
CIFG16B1SV16	*Sony Demo*	0.952	0.859	0.839	0.820	0.810	0.815	0.757	0.874	0.675	0.608	0.622	0.642
CIFG16B1SV22	*Sony Demo*	0.902	0.884	0.871	0.843	0.838	0.864	0.797	0.840	0.705	0.563	0.621	0.644
CIFG16B1SV24	*Sony Demo*	0.887	0.891	0.877	0.857	0.845	0.862	0.803	0.828	0.711	0.552	0.624	0.648
CIFG16B1SV28	*Sony Demo*	0.855	0.892	0.877	0.869	0.854	0.850	0.788	0.818	0.715	0.533	0.613	0.641
CIFG16B1SV34	*Sony Demo*	0.798	0.893	0.868	0.863	0.845	0.814	0.689	0.812	0.667	0.441	0.609	0.761
CIFG16B1SV38	*Sony Demo*	0.768	0.893	0.862	0.870	0.853	0.808	0.678	0.804	0.666	0.433	0.631	0.822
CIFG16B1SV42	*Sony Demo*	0.761	0.896	0.872	0.870	0.851	0.788	0.658	0.778	0.626	0.458	0.602	0.855
CIFG16B1SV48	*Sony Demo*	0.765	0.885	0.851	0.833	0.801	0.718	0.623	0.666	0.675	0.647	0.752	1.076
CIFG16B1SV10	*Silence of the Lambs*	0.980	0.926	0.915	0.915	0.901	0.915	0.880	0.948	0.945	0.930	0.933	0.931
CIFG16B1SV16	*Silence of the Lambs*	0.970	0.906	0.894	0.908	0.895	0.899	0.896	0.945	0.941	0.956	0.922	0.942
CIFG16B1SV22	*Silence of the Lambs*	0.928	0.894	0.882	0.892	0.875	0.875	0.894	0.932	0.915	0.932	0.882	0.916
CIFG16B1SV24	*Silence of the Lambs*	0.917	0.892	0.880	0.886	0.869	0.870	0.891	0.929	0.904	0.916	0.865	0.907
CIFG16B1SV28	*Silence of the Lambs*	0.897	0.889	0.873	0.874	0.860	0.859	0.886	0.924	0.885	0.893	0.840	0.894
CIFG16B1SV34	*Silence of the Lambs*	0.874	0.883	0.866	0.861	0.850	0.844	0.862	0.898	0.863	0.872	0.830	0.877
CIFG16B1SV38	*Silence of the Lambs*	0.865	0.881	0.867	0.855	0.849	0.844	0.851	0.891	0.866	0.868	0.850	0.873
CIFG16B1SV42	*Silence of the Lambs*	0.859	0.879	0.867	0.853	0.846	0.844	0.847	0.892	0.872	0.871	0.871	0.870
CIFG16B1SV48	*Silence of the Lambs*	0.840	0.862	0.849	0.847	0.849	0.866	0.848	0.904	0.867	0.897	0.888	0.860
CIFG16B1SV10	*Star Wars 4*	0.919	0.858	0.859	0.855	0.828	0.835	0.798	0.812	0.788	0.839	0.814	0.764
CIFG16B1SV16	*Star Wars 4*	0.900	0.865	0.860	0.871	0.853	0.864	0.857	0.878	0.883	0.925	0.955	0.870
CIFG16B1SV22	*Star Wars 4*	0.877	0.862	0.858	0.872	0.859	0.872	0.878	0.901	0.912	0.952	0.999	0.918
CIFG16B1SV24	*Star Wars 4*	0.872	0.860	0.860	0.877	0.862	0.876	0.881	0.908	0.918	0.962	1.013	0.929
CIFG16B1SV28	*Star Wars 4*	0.864	0.861	0.860	0.879	0.869	0.884	0.886	0.913	0.924	0.975	1.033	0.946
CIFG16B1SV34	*Star Wars 4*	0.851	0.860	0.863	0.887	0.877	0.898	0.891	0.924	0.928	0.956	1.038	0.968
CIFG16B1SV38	*Star Wars 4*	0.843	0.859	0.861	0.889	0.877	0.895	0.890	0.926	0.928	0.950	1.040	0.983
CIFG16B1SV42	*Star Wars 4*	0.838	0.854	0.854	0.884	0.870	0.881	0.884	0.913	0.924	0.939	1.035	0.993
CIFG16B1SV48	*Star Wars 4*	0.824	0.846	0.840	0.863	0.847	0.856	0.857	0.885	0.893	0.923	1.018	0.970
CIFG16B1SV10	*Tokyo olympics*	0.934	0.875	0.854	0.845	0.824	0.806	0.818	0.799	0.812	0.805	0.814	0.781
CIFG16B1SV16	*Tokyo olympics*	0.966	0.881	0.866	0.855	0.840	0.832	0.866	0.842	0.847	0.847	0.872	0.833
CIFG16B1SV22	*Tokyo olympics*	0.966	0.884	0.878	0.860	0.854	0.851	0.880	0.873	0.891	0.868	0.914	0.895
CIFG16B1SV24	*Tokyo olympics*	0.959	0.881	0.879	0.857	0.856	0.857	0.885	0.880	0.892	0.869	0.917	0.906
CIFG16B1SV28	*Tokyo olympics*	0.948	0.876	0.873	0.853	0.855	0.872	0.903	0.891	0.889	0.869	0.923	0.908
CIFG16B1SV34	*Tokyo olympics*	0.926	0.877	0.873	0.854	0.857	0.880	0.916	0.896	0.888	0.877	0.926	0.900
CIFG16B1SV38	*Tokyo olympics*	0.914	0.878	0.873	0.854	0.855	0.878	0.912	0.900	0.888	0.885	0.924	0.894
CIFG16B1SV42	*Tokyo olympics*	0.907	0.876	0.873	0.854	0.861	0.883	0.901	0.905	0.889	0.883	0.916	0.882
CIFG16B1SV48	*Tokyo olympics*	0.893	0.879	0.872	0.848	0.857	0.881	0.873	0.896	0.864	0.863	0.896	0.867
CIFG16B1SV10	*NBC 12 News*	0.958	0.887	0.877	0.889	0.881	0.908	0.876	0.877	0.849	0.880	0.859	0.839
CIFG16B1SV16	*NBC 12 News*	0.958	0.876	0.873	0.891	0.882	0.905	0.865	0.874	0.841	0.861	0.842	0.813
CIFG16B1SV22	*NBC 12 News*	0.920	0.865	0.870	0.891	0.879	0.878	0.833	0.867	0.829	0.809	0.807	0.747
CIFG16B1SV24	*NBC 12 News*	0.899	0.860	0.860	0.889	0.875	0.862	0.805	0.849	0.805	0.781	0.776	0.722
CIFG16B1SV28	*NBC 12 News*	0.862	0.842	0.836	0.858	0.840	0.806	0.787	0.795	0.765	0.774	0.721	0.656
CIFG16B1SV34	*NBC 12 News*	0.812	0.820	0.817	0.821	0.807	0.759	0.789	0.758	0.714	0.790	0.741	0.598
CIFG16B1SV38	*NBC 12 News*	0.785	0.809	0.810	0.811	0.799	0.750	0.792	0.756	0.690	0.783	0.719	0.609
CIFG16B1SV42	*NBC 12 News*	0.767	0.803	0.806	0.801	0.779	0.743	0.786	0.760	0.688	0.766	0.689	0.644
CIFG16B1SV48	*NBC 12 News*	0.747	0.797	0.781	0.782	0.770	0.737	0.783	0.761	0.695	0.764	0.757	0.699

TABLE LXX: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3SV10	*Sony Demo*	0.933	0.850	0.820	0.796	0.789	0.778	0.736	0.875	0.713	0.645	0.616	0.628
CIFG16B3SV16	*Sony Demo*	0.895	0.869	0.842	0.830	0.827	0.837	0.767	0.873	0.690	0.598	0.600	0.626
CIFG16B3SV22	*Sony Demo*	0.835	0.884	0.872	0.850	0.852	0.860	0.785	0.845	0.689	0.507	0.557	0.622
CIFG16B3SV24	*Sony Demo*	0.822	0.887	0.871	0.857	0.855	0.867	0.793	0.841	0.693	0.497	0.559	0.629
CIFG16B3SV28	*Sony Demo*	0.798	0.899	0.877	0.871	0.865	0.877	0.800	0.844	0.711	0.511	0.587	0.667
CIFG16B3SV34	*Sony Demo*	0.763	0.896	0.875	0.876	0.869	0.851	0.749	0.836	0.711	0.514	0.657	0.759
CIFG16B3SV38	*Sony Demo*	0.743	0.890	0.867	0.879	0.866	0.823	0.706	0.840	0.663	0.477	0.667	0.758
CIFG16B3SV42	*Sony Demo*	0.737	0.891	0.873	0.888	0.875	0.817	0.691	0.819	0.631	0.360	0.577	0.729
CIFG16B3SV48	*Sony Demo*	0.743	0.890	0.858	0.839	0.819	0.747	0.627	0.721	0.617	0.483	0.615	0.912
CIFG16B3SV10	*Silence of the Lambs*	0.912	0.919	0.911	0.914	0.900	0.914	0.881	0.949	0.941	0.929	0.916	0.926
CIFG16B3SV16	*Silence of the Lambs*	0.920	0.905	0.892	0.904	0.896	0.900	0.895	0.945	0.931	0.947	0.917	0.937
CIFG16B3SV22	*Silence of the Lambs*	0.893	0.897	0.882	0.893	0.878	0.874	0.895	0.935	0.905	0.932	0.883	0.921

TABLE LXX: *continued*

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3SV24	*Silence of the Lambs*	0.886	0.894	0.881	0.889	0.874	0.869	0.891	0.932	0.896	0.917	0.869	0.914
CIFG16B3SV28	*Silence of the Lambs*	0.871	0.892	0.876	0.883	0.868	0.860	0.889	0.930	0.884	0.898	0.849	0.903
CIFG16B3SV34	*Silence of the Lambs*	0.853	0.891	0.871	0.874	0.864	0.850	0.874	0.909	0.873	0.890	0.843	0.894
CIFG16B3SV38	*Silence of the Lambs*	0.845	0.886	0.872	0.868	0.865	0.849	0.864	0.902	0.873	0.891	0.859	0.889
CIFG16B3SV42	*Silence of the Lambs*	0.837	0.882	0.871	0.861	0.862	0.847	0.860	0.901	0.882	0.886	0.878	0.888
CIFG16B3SV48	*Silence of the Lambs*	0.819	0.866	0.854	0.854	0.857	0.861	0.862	0.916	0.882	0.899	0.885	0.880
CIFG16B3SV10	*Star Wars 4*	0.878	0.854	0.853	0.856	0.833	0.840	0.802	0.812	0.805	0.840	0.836	0.756
CIFG16B3SV16	*Star Wars 4*	0.865	0.861	0.861	0.871	0.855	0.863	0.849	0.871	0.873	0.910	0.937	0.850
CIFG16B3SV22	*Star Wars 4*	0.845	0.863	0.862	0.873	0.861	0.874	0.873	0.890	0.904	0.946	0.981	0.899
CIFG16B3SV24	*Star Wars 4*	0.841	0.863	0.862	0.875	0.864	0.879	0.881	0.897	0.910	0.953	0.993	0.909
CIFG16B3SV28	*Star Wars 4*	0.833	0.865	0.865	0.880	0.871	0.890	0.893	0.913	0.919	0.970	1.015	0.928
CIFG16B3SV34	*Star Wars 4*	0.826	0.869	0.870	0.889	0.882	0.905	0.906	0.926	0.931	0.983	1.049	0.963
CIFG16B3SV38	*Star Wars 4*	0.822	0.867	0.868	0.892	0.885	0.908	0.905	0.930	0.938	0.977	1.056	0.984
CIFG16B3SV42	*Star Wars 4*	0.817	0.863	0.866	0.892	0.881	0.898	0.898	0.925	0.941	0.969	1.054	1.003
CIFG16B3SV48	*Star Wars 4*	0.807	0.850	0.847	0.871	0.861	0.869	0.873	0.906	0.925	0.946	1.037	0.989
CIFG16B3SV10	*Tokyo olympics*	0.919	0.878	0.858	0.851	0.827	0.811	0.814	0.803	0.813	0.815	0.823	0.787
CIFG16B3SV16	*Tokyo olympics*	0.935	0.883	0.867	0.856	0.839	0.832	0.860	0.844	0.855	0.852	0.881	0.842
CIFG16B3SV22	*Tokyo olympics*	0.930	0.886	0.878	0.863	0.856	0.854	0.883	0.874	0.885	0.865	0.910	0.891
CIFG16B3SV24	*Tokyo olympics*	0.927	0.884	0.880	0.860	0.856	0.858	0.888	0.878	0.891	0.866	0.913	0.901
CIFG16B3SV28	*Tokyo olympics*	0.917	0.880	0.875	0.855	0.854	0.870	0.900	0.888	0.891	0.870	0.919	0.906
CIFG16B3SV34	*Tokyo olympics*	0.901	0.878	0.872	0.856	0.858	0.881	0.922	0.900	0.889	0.877	0.931	0.904
CIFG16B3SV38	*Tokyo olympics*	0.893	0.877	0.872	0.857	0.859	0.882	0.922	0.900	0.889	0.883	0.931	0.897
CIFG16B3SV42	*Tokyo olympics*	0.884	0.877	0.874	0.858	0.863	0.885	0.914	0.903	0.888	0.885	0.926	0.885
CIFG16B3SV48	*Tokyo olympics*	0.868	0.879	0.873	0.852	0.864	0.892	0.889	0.909	0.871	0.860	0.902	0.869
CIFG16B3SV10	*NBC 12 News*	0.905	0.890	0.884	0.899	0.883	0.908	0.871	0.876	0.852	0.871	0.846	0.820
CIFG16B3SV16	*NBC 12 News*	0.902	0.878	0.876	0.897	0.881	0.901	0.859	0.874	0.841	0.848	0.829	0.794
CIFG16B3SV22	*NBC 12 News*	0.876	0.863	0.866	0.889	0.872	0.873	0.823	0.859	0.827	0.806	0.794	0.741
CIFG16B3SV24	*NBC 12 News*	0.859	0.858	0.857	0.887	0.871	0.860	0.813	0.855	0.817	0.788	0.774	0.720
CIFG16B3SV28	*NBC 12 News*	0.826	0.842	0.838	0.867	0.852	0.821	0.803	0.823	0.792	0.794	0.734	0.678
CIFG16B3SV34	*NBC 12 News*	0.788	0.826	0.822	0.835	0.825	0.783	0.806	0.788	0.758	0.806	0.748	0.623
CIFG16B3SV38	*NBC 12 News*	0.767	0.819	0.819	0.822	0.811	0.770	0.804	0.779	0.749	0.791	0.730	0.620
CIFG16B3SV42	*NBC 12 News*	0.747	0.812	0.815	0.810	0.792	0.757	0.800	0.762	0.723	0.772	0.715	0.612
CIFG16B3SV48	*NBC 12 News*	0.728	0.802	0.787	0.773	0.752	0.714	0.774	0.728	0.673	0.735	0.640	0.637

TABLE LXXI: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7SV10	*Sony Demo*	0.912	0.852	0.818	0.797	0.794	0.779	0.734	0.876	0.721	0.647	0.617	0.615
CIFG16B7SV16	*Sony Demo*	0.866	0.873	0.844	0.836	0.835	0.851	0.773	0.865	0.704	0.586	0.592	0.603
CIFG16B7SV22	*Sony Demo*	0.791	0.886	0.866	0.856	0.848	0.863	0.747	0.832	0.689	0.448	0.509	0.594
CIFG16B7SV24	*Sony Demo*	0.771	0.890	0.863	0.860	0.854	0.868	0.750	0.839	0.691	0.428	0.502	0.600
CIFG16B7SV28	*Sony Demo*	0.740	0.901	0.865	0.870	0.864	0.874	0.738	0.844	0.690	0.426	0.552	0.652
CIFG16B7SV34	*Sony Demo*	0.714	0.898	0.863	0.880	0.870	0.857	0.709	0.853	0.661	0.442	0.658	0.736
CIFG16B7SV38	*Sony Demo*	0.709	0.903	0.869	0.889	0.877	0.846	0.716	0.863	0.635	0.411	0.663	0.717
CIFG16B7SV42	*Sony Demo*	0.710	0.908	0.879	0.886	0.882	0.839	0.718	0.844	0.637	0.343	0.602	0.688
CIFG16B7SV48	*Sony Demo*	0.718	0.897	0.865	0.839	0.823	0.765	0.633	0.732	0.560	0.383	0.577	0.776
CIFG16B7SV10	*Silence of the Lambs*	0.901	0.918	0.906	0.916	0.897	0.909	0.878	0.948	0.941	0.920	0.906	0.921
CIFG16B7SV16	*Silence of the Lambs*	0.881	0.904	0.888	0.902	0.887	0.890	0.888	0.940	0.918	0.937	0.896	0.927
CIFG16B7SV22	*Silence of the Lambs*	0.858	0.898	0.884	0.895	0.871	0.868	0.884	0.929	0.888	0.915	0.869	0.916
CIFG16B7SV24	*Silence of the Lambs*	0.852	0.897	0.883	0.893	0.868	0.863	0.883	0.929	0.883	0.907	0.863	0.912
CIFG16B7SV28	*Silence of the Lambs*	0.840	0.894	0.879	0.889	0.864	0.855	0.880	0.927	0.875	0.896	0.854	0.905
CIFG16B7SV34	*Silence of the Lambs*	0.827	0.893	0.877	0.888	0.865	0.850	0.874	0.913	0.874	0.897	0.856	0.899
CIFG16B7SV38	*Silence of the Lambs*	0.822	0.890	0.877	0.881	0.868	0.853	0.872	0.910	0.881	0.900	0.870	0.898
CIFG16B7SV42	*Silence of the Lambs*	0.818	0.883	0.876	0.873	0.857	0.845	0.869	0.908	0.889	0.898	0.886	0.899
CIFG16B7SV48	*Silence of the Lambs*	0.799	0.868	0.859	0.862	0.849	0.849	0.867	0.915	0.903	0.906	0.890	0.887
CIFG16B7SV10	*Star Wars 4*	0.862	0.852	0.851	0.860	0.839	0.848	0.812	0.827	0.818	0.849	0.859	0.778
CIFG16B7SV16	*Star Wars 4*	0.845	0.854	0.858	0.864	0.852	0.862	0.846	0.859	0.861	0.895	0.934	0.841
CIFG16B7SV22	*Star Wars 4*	0.822	0.852	0.859	0.865	0.858	0.873	0.868	0.877	0.895	0.937	0.969	0.887
CIFG16B7SV24	*Star Wars 4*	0.817	0.853	0.860	0.867	0.862	0.878	0.875	0.884	0.898	0.942	0.976	0.893
CIFG16B7SV28	*Star Wars 4*	0.810	0.858	0.865	0.873	0.870	0.890	0.891	0.899	0.908	0.956	0.995	0.907
CIFG16B7SV34	*Star Wars 4*	0.804	0.861	0.869	0.884	0.879	0.902	0.905	0.916	0.927	0.985	1.041	0.943
CIFG16B7SV38	*Star Wars 4*	0.802	0.862	0.868	0.886	0.882	0.906	0.906	0.924	0.937	0.985	1.060	0.975
CIFG16B7SV42	*Star Wars 4*	0.800	0.859	0.865	0.884	0.880	0.898	0.899	0.923	0.947	0.980	1.073	0.999
CIFG16B7SV48	*Star Wars 4*	0.793	0.847	0.852	0.871	0.870	0.871	0.878	0.906	0.935	0.963	1.045	0.999
CIFG16B7SV10	*Tokyo olympics*	0.911	0.879	0.859	0.852	0.830	0.809	0.807	0.805	0.812	0.810	0.827	0.790
CIFG16B7SV16	*Tokyo olympics*	0.920	0.883	0.869	0.860	0.843	0.836	0.854	0.844	0.860	0.856	0.882	0.850

TABLE LXXI: *continued*

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B7SV22	*Tokyo olympics*	0.904	0.887	0.879	0.863	0.858	0.862	0.887	0.877	0.885	0.865	0.912	0.895
CIFG16B7SV24	*Tokyo olympics*	0.899	0.884	0.879	0.860	0.857	0.863	0.893	0.879	0.889	0.866	0.913	0.900
CIFG16B7SV28	*Tokyo olympics*	0.888	0.883	0.877	0.859	0.857	0.868	0.905	0.885	0.890	0.870	0.915	0.903
CIFG16B7SV34	*Tokyo olympics*	0.872	0.883	0.875	0.859	0.860	0.878	0.923	0.897	0.890	0.876	0.928	0.903
CIFG16B7SV38	*Tokyo olympics*	0.864	0.879	0.874	0.858	0.863	0.884	0.927	0.904	0.893	0.881	0.932	0.900
CIFG16B7SV42	*Tokyo olympics*	0.857	0.875	0.877	0.860	0.867	0.888	0.920	0.907	0.891	0.884	0.928	0.888
CIFG16B7SV48	*Tokyo olympics*	0.846	0.879	0.875	0.854	0.868	0.899	0.899	0.917	0.877	0.862	0.903	0.874
CIFG16B7SV10	*NBC 12 News*	0.895	0.890	0.888	0.905	0.884	0.908	0.866	0.873	0.852	0.864	0.835	0.807
CIFG16B7SV16	*NBC 12 News*	0.887	0.877	0.878	0.898	0.878	0.893	0.851	0.871	0.839	0.835	0.816	0.775
CIFG16B7SV22	*NBC 12 News*	0.851	0.860	0.859	0.884	0.867	0.857	0.811	0.849	0.814	0.782	0.765	0.716
CIFG16B7SV24	*NBC 12 News*	0.834	0.853	0.851	0.878	0.857	0.843	0.808	0.837	0.809	0.785	0.748	0.701
CIFG16B7SV28	*NBC 12 News*	0.799	0.840	0.837	0.861	0.837	0.816	0.810	0.816	0.791	0.799	0.729	0.665
CIFG16B7SV34	*NBC 12 News*	0.761	0.832	0.830	0.843	0.821	0.795	0.816	0.801	0.768	0.808	0.736	0.643
CIFG16B7SV38	*NBC 12 News*	0.742	0.827	0.829	0.833	0.816	0.791	0.814	0.795	0.764	0.800	0.726	0.643
CIFG16B7SV42	*NBC 12 News*	0.728	0.820	0.823	0.822	0.803	0.780	0.809	0.788	0.744	0.776	0.711	0.648
CIFG16B7SV48	*NBC 12 News*	0.707	0.805	0.789	0.776	0.751	0.729	0.778	0.730	0.673	0.737	0.636	0.623

TABLE LXXII: Hurst parameters estimated from pox diagram of R/S as a function of the aggregation level a.

		Aggregation level a [frames]											
Enc. M.	Video	1	16	32	48	96	192	304	400	496	608	704	800
CIFG16B15SV10	*Sony Demo*	0.908	0.851	0.815	0.793	0.790	0.774	0.730	0.878	0.727	0.642	0.611	0.591
CIFG16B15SV16	*Sony Demo*	0.861	0.883	0.843	0.834	0.828	0.849	0.775	0.861	0.725	0.598	0.601	0.589
CIFG16B15SV22	*Sony Demo*	0.776	0.896	0.860	0.855	0.843	0.858	0.743	0.837	0.706	0.461	0.496	0.563
CIFG16B15SV24	*Sony Demo*	0.746	0.896	0.860	0.855	0.850	0.859	0.733	0.833	0.696	0.423	0.478	0.575
CIFG16B15SV28	*Sony Demo*	0.707	0.905	0.862	0.860	0.851	0.848	0.722	0.830	0.674	0.385	0.495	0.601
CIFG16B15SV34	*Sony Demo*	0.682	0.904	0.868	0.879	0.872	0.862	0.708	0.840	0.623	0.351	0.589	0.637
CIFG16B15SV38	*Sony Demo*	0.683	0.914	0.879	0.898	0.900	0.885	0.761	0.873	0.605	0.359	0.582	0.602
CIFG16B15SV42	*Sony Demo*	0.690	0.917	0.888	0.894	0.896	0.878	0.772	0.874	0.614	0.335	0.573	0.607
CIFG16B15SV48	*Sony Demo*	0.700	0.909	0.879	0.865	0.857	0.823	0.684	0.780	0.590	0.292	0.578	0.667
CIFG16B15SV10	*Silence of the Lambs*	0.897	0.917	0.906	0.918	0.894	0.905	0.876	0.948	0.942	0.912	0.902	0.919
CIFG16B15SV16	*Silence of the Lambs*	0.865	0.904	0.884	0.901	0.882	0.885	0.883	0.936	0.917	0.926	0.884	0.924
CIFG16B15SV22	*Silence of the Lambs*	0.831	0.895	0.875	0.889	0.873	0.859	0.875	0.927	0.877	0.910	0.855	0.909
CIFG16B15SV24	*Silence of the Lambs*	0.824	0.893	0.875	0.890	0.867	0.854	0.872	0.927	0.871	0.904	0.852	0.906
CIFG16B15SV28	*Silence of the Lambs*	0.811	0.893	0.877	0.880	0.859	0.848	0.869	0.927	0.869	0.899	0.857	0.904
CIFG16B15SV34	*Silence of the Lambs*	0.804	0.890	0.874	0.882	0.858	0.846	0.870	0.916	0.881	0.910	0.874	0.906
CIFG16B15SV38	*Silence of the Lambs*	0.802	0.890	0.876	0.877	0.865	0.852	0.874	0.912	0.890	0.919	0.886	0.905
CIFG16B15SV42	*Silence of the Lambs*	0.799	0.884	0.873	0.869	0.860	0.847	0.874	0.912	0.902	0.921	0.900	0.905
CIFG16B15SV48	*Silence of the Lambs*	0.784	0.867	0.853	0.853	0.845	0.843	0.880	0.917	0.926	0.927	0.913	0.900
CIFG16B15SV10	*Star Wars 4*	0.853	0.849	0.847	0.858	0.836	0.845	0.807	0.826	0.807	0.844	0.855	0.771
CIFG16B15SV16	*Star Wars 4*	0.826	0.848	0.850	0.864	0.848	0.859	0.845	0.864	0.865	0.895	0.936	0.848
CIFG16B15SV22	*Star Wars 4*	0.803	0.845	0.853	0.863	0.853	0.865	0.861	0.867	0.891	0.930	0.954	0.878
CIFG16B15SV24	*Star Wars 4*	0.798	0.846	0.854	0.864	0.856	0.871	0.869	0.871	0.894	0.937	0.955	0.881
CIFG16B15SV28	*Star Wars 4*	0.787	0.850	0.860	0.870	0.866	0.888	0.885	0.886	0.902	0.951	0.967	0.885
CIFG16B15SV34	*Star Wars 4*	0.783	0.859	0.865	0.877	0.876	0.904	0.902	0.909	0.924	0.971	1.014	0.907
CIFG16B15SV38	*Star Wars 4*	0.781	0.862	0.863	0.880	0.882	0.906	0.906	0.925	0.944	0.983	1.044	0.945
CIFG16B15SV42	*Star Wars 4*	0.780	0.862	0.861	0.881	0.880	0.901	0.902	0.929	0.958	0.990	1.067	0.977
CIFG16B15SV48	*Star Wars 4*	0.774	0.854	0.854	0.870	0.867	0.876	0.886	0.923	0.956	0.976	1.052	0.998
CIFG16B15SV10	*Tokyo olympics*	0.911	0.882	0.857	0.851	0.830	0.808	0.803	0.803	0.811	0.803	0.824	0.790
CIFG16B15SV16	*Tokyo olympics*	0.916	0.889	0.869	0.862	0.844	0.837	0.846	0.842	0.855	0.855	0.879	0.847
CIFG16B15SV22	*Tokyo olympics*	0.894	0.885	0.877	0.864	0.859	0.870	0.886	0.882	0.883	0.865	0.912	0.895
CIFG16B15SV24	*Tokyo olympics*	0.887	0.883	0.877	0.862	0.857	0.871	0.895	0.882	0.886	0.865	0.914	0.898
CIFG16B15SV28	*Tokyo olympics*	0.873	0.881	0.876	0.861	0.857	0.870	0.905	0.885	0.888	0.867	0.915	0.899
CIFG16B15SV34	*Tokyo olympics*	0.856	0.880	0.875	0.863	0.861	0.873	0.917	0.893	0.890	0.872	0.923	0.899
CIFG16B15SV38	*Tokyo olympics*	0.846	0.878	0.875	0.865	0.865	0.882	0.928	0.904	0.892	0.875	0.931	0.902
CIFG16B15SV42	*Tokyo olympics*	0.837	0.875	0.872	0.867	0.871	0.890	0.931	0.910	0.894	0.879	0.934	0.894
CIFG16B15SV48	*Tokyo olympics*	0.824	0.873	0.872	0.858	0.870	0.903	0.920	0.926	0.897	0.872	0.912	0.876
CIFG16B15SV10	*NBC 12 News*	0.890	0.891	0.890	0.907	0.884	0.905	0.863	0.871	0.852	0.861	0.830	0.800
CIFG16B15SV16	*NBC 12 News*	0.882	0.877	0.879	0.901	0.878	0.888	0.847	0.868	0.838	0.828	0.809	0.763
CIFG16B15SV22	*NBC 12 News*	0.838	0.857	0.855	0.885	0.866	0.848	0.810	0.844	0.804	0.779	0.751	0.701
CIFG16B15SV24	*NBC 12 News*	0.818	0.848	0.845	0.870	0.851	0.830	0.806	0.828	0.794	0.781	0.723	0.680
CIFG16B15SV28	*NBC 12 News*	0.779	0.838	0.837	0.854	0.829	0.804	0.813	0.801	0.773	0.792	0.724	0.644
CIFG16B15SV34	*NBC 12 News*	0.739	0.830	0.831	0.848	0.824	0.800	0.824	0.800	0.765	0.812	0.726	0.656
CIFG16B15SV38	*NBC 12 News*	0.719	0.825	0.828	0.844	0.824	0.804	0.824	0.808	0.776	0.809	0.736	0.677
CIFG16B15SV42	*NBC 12 News*	0.706	0.822	0.823	0.835	0.813	0.800	0.819	0.809	0.772	0.792	0.732	0.692
CIFG16B15SV48	*NBC 12 News*	0.690	0.805	0.798	0.793	0.766	0.748	0.799	0.760	0.692	0.750	0.699	0.660

TABLE LXXIII: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B1SV10	*Sony Demo*	1.283	1.371	1.358	1.214	1.507	1.242	1.293	1.089	1.051	1.146	1.010
CIFG16B1SV16	*Sony Demo*	1.236	1.332	1.342	1.258	1.448	1.255	1.271	1.114	1.083	1.016	1.174
CIFG16B1SV22	*Sony Demo*	1.197	1.288	1.332	1.302	1.431	1.274	1.265	1.118	1.161	1.170	1.318
CIFG16B1SV24	*Sony Demo*	1.175	1.263	1.327	1.331	1.435	1.287	1.257	1.125	1.218	1.259	1.387
CIFG16B1SV28	*Sony Demo*	1.114	1.199	1.319	1.342	1.466	1.295	1.243	1.146	1.331	1.551	1.559
CIFG16B1SV34	*Sony Demo*	1.081	1.138	1.251	1.324	1.506	1.267	1.253	1.171	1.437	1.699	1.948
CIFG16B1SV38	*Sony Demo*	1.091	1.132	1.234	1.338	1.474	1.284	1.273	1.140	1.489	1.608	1.635
CIFG16B1SV42	*Sony Demo*	1.108	1.149	1.258	1.344	1.435	1.354	1.249	1.076	1.368	1.456	1.312
CIFG16B1SV48	*Sony Demo*	1.148	1.202	1.312	1.387	1.492	1.353	1.307	0.997	1.063	1.181	0.968
CIFG16B1SV10	*Silence of the Lambs*	1.222	1.070	0.867	1.050	1.084	1.061	1.025	0.984	0.978	1.020	1.174
CIFG16B1SV16	*Silence of the Lambs*	1.211	1.148	0.995	1.070	1.084	1.042	1.005	1.001	1.046	1.067	1.273
CIFG16B1SV22	*Silence of the Lambs*	1.188	1.155	1.039	1.071	1.055	1.048	0.966	0.990	1.025	1.060	1.356
CIFG16B1SV24	*Silence of the Lambs*	1.184	1.152	1.048	1.068	1.055	1.053	0.959	0.981	1.022	1.054	1.410
CIFG16B1SV28	*Silence of the Lambs*	1.175	1.152	1.066	1.065	1.067	1.057	0.948	0.968	1.014	1.038	1.279
CIFG16B1SV34	*Silence of the Lambs*	1.160	1.159	1.086	1.073	1.076	1.029	0.933	0.946	0.989	1.015	1.238
CIFG16B1SV38	*Silence of the Lambs*	1.152	1.164	1.102	1.061	1.075	1.011	0.923	0.927	0.964	1.008	1.239
CIFG16B1SV42	*Silence of the Lambs*	1.138	1.172	1.112	1.044	1.068	0.997	0.920	0.902	0.934	1.002	1.200
CIFG16B1SV48	*Silence of the Lambs*	1.087	1.127	1.104	0.993	1.020	0.962	0.890	0.840	0.889	0.981	1.217
CIFG16B1SV10	*Star Wars 4*	1.182	1.008	0.966	0.861	0.979	0.963	0.940	0.995	0.895	0.814	0.666
CIFG16B1SV16	*Star Wars 4*	1.154	1.038	0.992	0.939	0.966	0.990	0.965	0.981	0.992	1.037	0.766
CIFG16B1SV22	*Star Wars 4*	1.139	1.060	1.011	0.957	0.949	0.988	0.917	0.958	1.045	0.980	0.789
CIFG16B1SV24	*Star Wars 4*	1.129	1.062	1.019	0.965	0.944	0.980	0.907	0.951	1.046	0.973	0.793
CIFG16B1SV28	*Star Wars 4*	1.127	1.071	1.031	0.977	0.922	0.959	0.891	0.938	1.024	0.931	0.800
CIFG16B1SV34	*Star Wars 4*	1.115	1.074	1.043	0.982	0.934	0.968	0.899	0.943	0.985	0.857	0.873
CIFG16B1SV38	*Star Wars 4*	1.102	1.071	1.038	0.976	0.921	0.956	0.882	0.936	0.959	0.814	0.792
CIFG16B1SV42	*Star Wars 4*	1.079	1.070	1.027	0.975	0.907	0.945	0.823	0.893	0.930	0.768	0.780
CIFG16B1SV48	*Star Wars 4*	1.024	1.040	1.011	0.973	0.878	0.922	0.798	0.909	0.869	0.764	0.774
CIFG16B1SV10	*Tokyo olympics*	1.258	1.205	1.214	1.169	1.078	1.054	1.114	1.060	1.151	1.132	1.149
CIFG16B1SV16	*Tokyo olympics*	1.245	1.225	1.219	1.163	1.060	1.020	1.097	1.058	1.159	1.104	1.095
CIFG16B1SV22	*Tokyo olympics*	1.222	1.220	1.199	1.132	1.053	0.999	1.016	1.020	1.049	0.999	1.005
CIFG16B1SV24	*Tokyo olympics*	1.217	1.214	1.196	1.118	1.038	0.981	0.991	0.995	1.032	0.983	0.972
CIFG16B1SV28	*Tokyo olympics*	1.206	1.204	1.180	1.099	1.026	0.955	0.972	0.975	0.969	0.920	0.912
CIFG16B1SV34	*Tokyo olympics*	1.188	1.185	1.160	1.075	1.020	0.970	0.975	0.977	0.956	0.912	0.915
CIFG16B1SV38	*Tokyo olympics*	1.178	1.173	1.140	1.058	1.009	0.966	0.953	0.976	0.932	0.891	0.895
CIFG16B1SV42	*Tokyo olympics*	1.164	1.161	1.125	1.057	1.009	0.962	0.945	0.976	0.920	0.879	0.887
CIFG16B1SV48	*Tokyo olympics*	1.126	1.125	1.083	1.027	0.990	0.947	0.915	0.988	0.934	0.865	0.874
CIFG16B1SV10	*NBC 12 News*	1.108	1.107	1.052	1.047	0.960	1.011	0.926	0.857	0.826	0.883	1.301
CIFG16B1SV16	*NBC 12 News*	1.105	1.120	1.055	1.059	0.941	1.013	0.849	0.802	0.787	0.838	1.249
CIFG16B1SV22	*NBC 12 News*	1.063	1.087	1.041	1.054	0.928	0.983	0.875	0.803	0.699	0.831	1.149
CIFG16B1SV24	*NBC 12 News*	1.036	1.060	1.028	1.040	0.928	0.972	0.874	0.814	0.708	0.853	1.087
CIFG16B1SV28	*NBC 12 News*	0.990	1.028	1.008	0.990	0.905	0.972	0.876	0.820	0.709	0.902	1.042
CIFG16B1SV34	*NBC 12 News*	0.954	0.989	0.967	0.967	0.874	0.946	0.885	0.826	0.727	0.911	1.061
CIFG16B1SV38	*NBC 12 News*	0.932	0.963	0.948	0.951	0.884	0.937	0.880	0.856	0.772	0.892	1.079
CIFG16B1SV42	*NBC 12 News*	0.911	0.946	0.931	0.959	0.904	0.936	0.877	0.921	0.838	0.847	1.052
CIFG16B1SV48	*NBC 12 News*	0.888	0.929	0.897	0.947	0.936	0.884	0.859	1.042	0.985	0.835	0.988

TABLE LXXIV: Hurst parameters estimated from periodogram as a function of the aggregation level a.

		Aggregation level a [frames]										
Enc. M.	Video	16	32	48	96	192	304	400	496	608	704	800
CIFG16B3SV10	*Sony Demo*	1.273	1.366	1.385	1.247	1.465	1.216	1.258	1.048	1.061	1.067	0.965
CIFG16B3SV16	*Sony Demo*	1.220	1.332	1.369	1.290	1.457	1.262	1.348	1.107	1.125	1.126	1.146
CIFG16B3SV22	*Sony Demo*	1.146	1.279	1.351	1.324	1.447	1.280	1.260	1.121	1.236	1.343	1.266
CIFG16B3SV24	*Sony Demo*	1.129	1.258	1.342	1.333	1.448	1.277	1.239	1.125	1.285	1.436	1.311
CIFG16B3SV28	*Sony Demo*	1.091	1.222	1.332	1.356	1.465	1.260	1.217	1.134	1.464	1.710	1.412
CIFG16B3SV34	*Sony Demo*	1.080	1.152	1.281	1.350	1.508	1.259	1.221	1.146	1.506	1.758	1.632
CIFG16B3SV38	*Sony Demo*	1.079	1.131	1.238	1.340	1.431	1.276	1.253	1.129	1.697	1.606	1.672
CIFG16B3SV42	*Sony Demo*	1.120	1.158	1.273	1.374	1.444	1.339	1.289	1.068	1.365	1.486	1.377
CIFG16B3SV48	*Sony Demo*	1.155	1.209	1.301	1.381	1.485	1.437	1.250	1.003	1.073	1.238	1.007
CIFG16B3SV10	*Silence of the Lambs*	1.223	1.060	0.848	1.051	1.106	1.090	1.064	1.006	1.021	1.048	1.168
CIFG16B3SV16	*Silence of the Lambs*	1.221	1.145	0.982	1.066	1.091	1.042	1.009	1.007	1.075	1.072	1.268
CIFG16B3SV22	*Silence of the Lambs*	1.189	1.156	1.032	1.065	1.055	1.037	0.976	0.997	1.036	1.063	1.341
CIFG16B3SV24	*Silence of the Lambs*	1.183	1.158	1.042	1.067	1.052	1.041	0.968	0.991	1.032	1.057	1.363
CIFG16B3SV28	*Silence of the Lambs*	1.174	1.157	1.054	1.069	1.059	1.040	0.958	0.974	1.023	1.040	1.289
CIFG16B3SV34	*Silence of the Lambs*	1.165	1.163	1.082	1.065	1.065	1.020	0.941	0.954	0.999	1.016	1.267
CIFG16B3SV38	*Silence of the Lambs*	1.154	1.174	1.106	1.073	1.061	1.004	0.929	0.936	0.981	1.007	1.269

TABLE LXXIV: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B3SV42	*Silence of the Lambs*	1.147	1.182	1.119	1.047	1.065	1.004	0.930	0.918	0.960	1.013	1.241
CIFG16B3SV48	*Silence of the Lambs*	1.099	1.152	1.118	1.010	1.032	0.984	0.890	0.856	0.916	1.021	1.233
CIFG16B3SV10	*Star Wars 4*	1.191	1.011	0.963	0.847	0.971	0.948	0.944	0.999	0.905	0.794	0.635
CIFG16B3SV16	*Star Wars 4*	1.168	1.056	0.997	0.945	0.964	0.987	0.954	0.994	1.006	0.998	0.764
CIFG16B3SV22	*Star Wars 4*	1.143	1.067	1.009	0.956	0.954	1.007	0.932	0.974	1.041	0.987	0.811
CIFG16B3SV24	*Star Wars 4*	1.136	1.077	1.013	0.960	0.947	1.004	0.920	0.965	1.033	0.972	0.799
CIFG16B3SV28	*Star Wars 4*	1.125	1.081	1.026	0.973	0.939	0.989	0.913	0.961	1.042	0.940	0.802
CIFG16B3SV34	*Star Wars 4*	1.115	1.090	1.045	0.981	0.939	0.983	0.903	0.951	0.974	0.875	0.819
CIFG16B3SV38	*Star Wars 4*	1.099	1.087	1.045	0.974	0.934	0.965	0.884	0.932	0.957	0.821	0.794
CIFG16B3SV42	*Star Wars 4*	1.078	1.080	1.035	0.971	0.926	0.965	0.861	0.935	0.910	0.786	0.775
CIFG16B3SV48	*Star Wars 4*	1.030	1.060	1.025	0.981	0.909	0.950	0.812	0.957	0.888	0.764	0.795
CIFG16B3SV10	*Tokyo olympics*	1.240	1.203	1.200	1.160	1.080	1.056	1.099	1.041	1.126	1.142	1.141
CIFG16B3SV16	*Tokyo olympics*	1.243	1.221	1.213	1.156	1.063	1.016	1.082	1.042	1.133	1.106	1.087
CIFG16B3SV22	*Tokyo olympics*	1.220	1.222	1.194	1.132	1.052	0.992	1.030	1.028	1.069	1.030	1.015
CIFG16B3SV24	*Tokyo olympics*	1.212	1.217	1.189	1.118	1.040	0.983	1.005	1.005	1.034	1.011	0.984
CIFG16B3SV28	*Tokyo olympics*	1.205	1.208	1.175	1.097	1.026	0.964	0.978	0.978	0.993	0.959	0.931
CIFG16B3SV34	*Tokyo olympics*	1.191	1.194	1.157	1.077	1.023	0.969	0.971	0.972	0.968	0.921	0.915
CIFG16B3SV38	*Tokyo olympics*	1.182	1.178	1.140	1.064	1.018	0.975	0.964	0.971	0.944	0.902	0.905
CIFG16B3SV42	*Tokyo olympics*	1.170	1.168	1.120	1.054	1.008	0.967	0.948	0.972	0.928	0.878	0.888
CIFG16B3SV48	*Tokyo olympics*	1.132	1.130	1.083	1.032	1.002	0.950	0.941	0.994	0.935	0.875	0.877
CIFG16B3SV10	*NBC 12 News*	1.104	1.104	1.051	1.069	0.979	1.011	0.905	0.848	0.789	0.887	1.292
CIFG16B3SV16	*NBC 12 News*	1.109	1.118	1.055	1.067	0.950	1.006	0.851	0.749	0.713	0.847	1.263
CIFG16B3SV22	*NBC 12 News*	1.077	1.098	1.043	1.064	0.929	0.977	0.893	0.825	0.726	0.857	1.178
CIFG16B3SV24	*NBC 12 News*	1.041	1.070	1.031	1.043	0.927	0.957	0.886	0.826	0.720	0.863	1.160
CIFG16B3SV28	*NBC 12 News*	0.990	1.033	1.012	0.994	0.903	0.957	0.882	0.827	0.718	0.904	1.140
CIFG16B3SV34	*NBC 12 News*	0.943	0.999	0.982	0.966	0.890	0.938	0.878	0.824	0.733	0.918	1.077
CIFG16B3SV38	*NBC 12 News*	0.923	0.977	0.963	0.949	0.906	0.922	0.869	0.840	0.763	0.870	1.094
CIFG16B3SV42	*NBC 12 News*	0.909	0.958	0.941	0.946	0.894	0.901	0.863	0.896	0.810	0.807	1.088
CIFG16B3SV48	*NBC 12 News*	0.895	0.936	0.912	0.943	0.957	0.883	0.850	0.971	0.989	0.768	0.957

TABLE LXXV: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B7SV10	*Sony Demo*	1.263	1.349	1.399	1.280	1.447	1.217	1.271	1.044	1.051	1.074	0.973
CIFG16B7SV16	*Sony Demo*	1.214	1.323	1.396	1.317	1.448	1.269	1.311	1.078	1.144	1.364	1.109
CIFG16B7SV22	*Sony Demo*	1.149	1.270	1.378	1.342	1.466	1.275	1.230	1.100	1.334	1.382	1.226
CIFG16B7SV24	*Sony Demo*	1.130	1.255	1.359	1.368	1.470	1.264	1.220	1.106	1.408	1.413	1.257
CIFG16B7SV28	*Sony Demo*	1.113	1.234	1.344	1.372	1.487	1.244	1.214	1.120	1.617	1.511	1.329
CIFG16B7SV34	*Sony Demo*	1.090	1.168	1.313	1.370	1.499	1.238	1.216	1.116	1.753	1.619	1.482
CIFG16B7SV38	*Sony Demo*	1.103	1.156	1.284	1.370	1.455	1.265	1.224	1.092	1.586	1.578	1.616
CIFG16B7SV42	*Sony Demo*	1.146	1.182	1.292	1.375	1.497	1.375	1.301	1.039	1.356	1.486	1.391
CIFG16B7SV48	*Sony Demo*	1.192	1.232	1.317	1.384	1.463	1.357	1.243	0.970	1.049	1.257	1.013
CIFG16B7SV10	*Silence of the Lambs*	1.234	1.087	0.876	1.063	1.126	1.094	1.064	1.015	1.038	1.054	1.176
CIFG16B7SV16	*Silence of the Lambs*	1.234	1.157	0.991	1.064	1.090	1.063	1.010	1.007	1.077	1.070	1.342
CIFG16B7SV22	*Silence of the Lambs*	1.206	1.167	1.032	1.057	1.062	1.063	0.979	0.994	1.046	1.067	1.306
CIFG16B7SV24	*Silence of the Lambs*	1.197	1.166	1.043	1.056	1.056	1.073	0.974	0.991	1.038	1.060	1.292
CIFG16B7SV28	*Silence of the Lambs*	1.181	1.166	1.058	1.054	1.057	1.068	0.964	0.975	1.022	1.041	1.281
CIFG16B7SV34	*Silence of the Lambs*	1.172	1.174	1.081	1.055	1.069	1.037	0.948	0.958	0.995	1.017	1.273
CIFG16B7SV38	*Silence of the Lambs*	1.173	1.189	1.112	1.056	1.067	1.020	0.933	0.944	0.980	1.010	1.311
CIFG16B7SV42	*Silence of the Lambs*	1.162	1.193	1.120	1.037	1.074	1.020	0.937	0.928	0.966	1.019	1.270
CIFG16B7SV48	*Silence of the Lambs*	1.126	1.168	1.119	1.000	1.041	0.993	0.888	0.862	0.922	1.038	1.260
CIFG16B7SV10	*Star Wars 4*	1.197	1.019	0.962	0.857	0.950	0.939	0.943	0.985	0.931	0.847	0.643
CIFG16B7SV16	*Star Wars 4*	1.191	1.066	1.004	0.944	0.952	0.976	0.926	0.998	0.999	0.970	0.760
CIFG16B7SV22	*Star Wars 4*	1.163	1.070	1.015	0.954	0.940	1.006	0.947	0.983	1.029	0.972	0.787
CIFG16B7SV24	*Star Wars 4*	1.155	1.075	1.021	0.962	0.939	1.027	0.920	0.979	1.030	0.968	0.791
CIFG16B7SV28	*Star Wars 4*	1.143	1.081	1.032	0.973	0.927	1.016	0.911	0.977	1.026	0.944	0.798
CIFG16B7SV34	*Star Wars 4*	1.136	1.100	1.060	0.992	0.930	0.996	0.891	0.962	0.982	0.887	0.808
CIFG16B7SV38	*Star Wars 4*	1.127	1.103	1.057	0.977	0.928	0.972	0.880	0.976	0.968	0.840	0.809
CIFG16B7SV42	*Star Wars 4*	1.111	1.101	1.050	0.960	0.920	0.974	0.866	0.955	0.932	0.808	0.779
CIFG16B7SV48	*Star Wars 4*	1.066	1.075	1.050	0.986	0.919	0.968	0.827	0.971	0.901	0.781	0.759
CIFG16B7SV10	*Tokyo olympics*	1.236	1.202	1.192	1.156	1.079	1.056	1.086	1.039	1.116	1.140	1.135
CIFG16B7SV16	*Tokyo olympics*	1.240	1.220	1.201	1.148	1.065	1.010	1.065	1.039	1.122	1.106	1.076
CIFG16B7SV22	*Tokyo olympics*	1.223	1.222	1.186	1.119	1.049	0.979	1.017	1.012	1.049	1.011	0.993
CIFG16B7SV24	*Tokyo olympics*	1.220	1.218	1.177	1.106	1.036	0.972	0.999	0.996	1.015	0.981	0.969
CIFG16B7SV28	*Tokyo olympics*	1.212	1.208	1.165	1.088	1.025	0.968	0.987	0.982	0.979	0.948	0.911
CIFG16B7SV34	*Tokyo olympics*	1.198	1.198	1.148	1.068	1.020	0.971	0.981	0.978	0.964	0.925	0.915

TABLE LXXV: *continued*

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B7SV38	*Tokyo olympics*	1.187	1.183	1.133	1.057	1.011	0.981	0.971	0.975	0.954	0.909	0.904
CIFG16B7SV42	*Tokyo olympics*	1.180	1.167	1.109	1.049	1.001	0.965	0.947	0.978	0.943	0.886	0.884
CIFG16B7SV48	*Tokyo olympics*	1.150	1.140	1.077	1.027	0.994	0.951	0.945	0.996	0.940	0.884	0.878
CIFG16B7SV10	*NBC 12 News*	1.097	1.101	1.045	1.062	0.978	1.010	0.894	0.840	0.764	0.891	1.283
CIFG16B7SV16	*NBC 12 News*	1.109	1.114	1.053	1.071	0.950	1.005	0.885	0.811	0.718	0.857	1.274
CIFG16B7SV22	*NBC 12 News*	1.082	1.088	1.040	1.064	0.937	0.979	0.902	0.846	0.736	0.884	1.169
CIFG16B7SV24	*NBC 12 News*	1.057	1.067	1.028	1.042	0.929	0.968	0.902	0.845	0.730	0.894	1.149
CIFG16B7SV28	*NBC 12 News*	1.004	1.034	1.006	1.017	0.916	0.952	0.893	0.843	0.732	0.918	1.126
CIFG16B7SV34	*NBC 12 News*	0.959	1.004	0.984	0.978	0.916	0.940	0.875	0.840	0.761	0.917	1.117
CIFG16B7SV38	*NBC 12 News*	0.938	0.991	0.970	0.961	0.901	0.925	0.862	0.858	0.784	0.865	1.125
CIFG16B7SV42	*NBC 12 News*	0.923	0.975	0.950	0.951	0.901	0.903	0.853	0.899	0.823	0.799	1.161
CIFG16B7SV48	*NBC 12 News*	0.912	0.941	0.920	0.953	0.944	0.899	0.846	0.968	0.942	0.769	0.977

TABLE LXXVI: Hurst parameters estimated from periodogram as a function of the aggregation level a.

Enc. M.	Video	Aggregation level a [frames] 16	32	48	96	192	304	400	496	608	704	800
CIFG16B15SV10	*Sony Demo*	1.276	1.333	1.402	1.305	1.433	1.204	1.255	1.058	1.049	1.091	0.982
CIFG16B15SV16	*Sony Demo*	1.238	1.318	1.396	1.328	1.439	1.278	1.307	1.069	1.143	1.257	1.093
CIFG16B15SV22	*Sony Demo*	1.202	1.298	1.381	1.345	1.466	1.292	1.223	1.069	1.332	1.420	1.189
CIFG16B15SV24	*Sony Demo*	1.193	1.283	1.349	1.344	1.482	1.274	1.214	1.069	1.392	1.462	1.212
CIFG16B15SV28	*Sony Demo*	1.175	1.279	1.302	1.372	1.499	1.259	1.216	1.063	1.515	1.495	1.261
CIFG16B15SV34	*Sony Demo*	1.190	1.248	1.268	1.406	1.545	1.259	1.216	1.059	1.577	1.547	1.385
CIFG16B15SV38	*Sony Demo*	1.195	1.231	1.243	1.401	1.499	1.248	1.232	1.054	1.407	1.504	1.516
CIFG16B15SV42	*Sony Demo*	1.220	1.233	1.270	1.406	1.529	1.266	1.202	1.029	1.236	1.442	1.496
CIFG16B15SV48	*Sony Demo*	1.235	1.259	1.334	1.398	1.455	1.308	1.192	0.977	1.021	1.272	1.076
CIFG16B15SV10	*Silence of the Lambs*	1.228	1.084	0.879	1.058	1.127	1.101	1.061	1.008	1.030	1.043	1.166
CIFG16B15SV16	*Silence of the Lambs*	1.244	1.164	0.991	1.057	1.091	1.081	1.013	1.011	1.076	1.060	1.307
CIFG16B15SV22	*Silence of the Lambs*	1.237	1.189	1.041	1.047	1.065	1.077	0.989	0.995	1.064	1.078	1.258
CIFG16B15SV24	*Silence of the Lambs*	1.235	1.192	1.053	1.046	1.060	1.082	0.985	0.989	1.052	1.079	1.257
CIFG16B15SV28	*Silence of the Lambs*	1.239	1.200	1.068	1.048	1.061	1.070	0.978	0.980	1.033	1.064	1.262
CIFG16B15SV34	*Silence of the Lambs*	1.231	1.225	1.100	1.044	1.083	1.035	0.962	0.961	1.006	1.038	1.306
CIFG16B15SV38	*Silence of the Lambs*	1.232	1.232	1.115	1.031	1.083	1.021	0.948	0.949	0.987	1.030	1.333
CIFG16B15SV42	*Silence of the Lambs*	1.231	1.243	1.134	1.024	1.057	1.018	0.946	0.935	0.970	1.036	1.357
CIFG16B15SV48	*Silence of the Lambs*	1.216	1.200	1.139	1.009	1.045	0.994	0.917	0.878	0.955	1.053	1.283
CIFG16B15SV10	*Star Wars 4*	1.197	1.017	0.969	0.854	0.953	0.932	0.919	0.972	0.915	0.840	0.622
CIFG16B15SV16	*Star Wars 4*	1.200	1.062	1.000	0.931	0.941	0.941	0.938	0.975	1.003	0.968	0.755
CIFG16B15SV22	*Star Wars 4*	1.198	1.079	1.013	0.949	0.922	0.977	0.907	0.968	1.017	0.973	0.776
CIFG16B15SV24	*Star Wars 4*	1.195	1.083	1.020	0.956	0.919	0.988	0.932	0.970	1.022	0.970	0.784
CIFG16B15SV28	*Star Wars 4*	1.187	1.095	1.034	0.960	0.905	0.994	0.906	0.974	1.029	0.956	0.797
CIFG16B15SV34	*Star Wars 4*	1.189	1.114	1.066	0.976	0.921	0.959	0.884	0.974	0.985	0.918	0.798
CIFG16B15SV38	*Star Wars 4*	1.187	1.126	1.084	0.983	0.931	0.970	0.891	1.002	0.970	0.886	0.808
CIFG16B15SV42	*Star Wars 4*	1.177	1.130	1.092	0.985	0.925	0.966	0.881	0.986	0.957	0.855	0.781
CIFG16B15SV48	*Star Wars 4*	1.138	1.119	1.092	0.998	0.919	0.976	0.858	0.984	0.928	0.813	0.746
CIFG16B15SV10	*Tokyo olympics*	1.237	1.201	1.192	1.153	1.080	1.062	1.088	1.048	1.112	1.143	1.140
CIFG16B15SV16	*Tokyo olympics*	1.238	1.219	1.190	1.144	1.065	1.010	1.057	1.038	1.117	1.111	1.074
CIFG16B15SV22	*Tokyo olympics*	1.228	1.216	1.184	1.114	1.048	0.965	1.015	1.006	1.025	0.988	0.969
CIFG16B15SV24	*Tokyo olympics*	1.226	1.211	1.179	1.103	1.042	0.967	1.002	0.998	0.987	0.937	0.943
CIFG16B15SV28	*Tokyo olympics*	1.218	1.202	1.166	1.088	1.027	0.971	0.989	0.989	0.967	0.946	0.924
CIFG16B15SV34	*Tokyo olympics*	1.215	1.196	1.150	1.065	1.018	0.972	0.988	0.992	0.955	0.920	0.913
CIFG16B15SV38	*Tokyo olympics*	1.213	1.186	1.137	1.053	1.009	0.975	0.980	0.993	0.956	0.907	0.903
CIFG16B15SV42	*Tokyo olympics*	1.203	1.171	1.114	1.040	0.994	0.969	0.956	0.995	0.957	0.894	0.885
CIFG16B15SV48	*Tokyo olympics*	1.179	1.143	1.079	1.021	0.988	0.960	0.958	1.003	0.959	0.890	0.880
CIFG16B15SV10	*NBC 12 News*	1.097	1.104	1.046	1.059	0.974	1.011	0.867	0.830	0.765	0.896	1.284
CIFG16B15SV16	*NBC 12 News*	1.108	1.117	1.052	1.077	0.955	1.005	0.896	0.832	0.744	0.872	1.296
CIFG16B15SV22	*NBC 12 News*	1.087	1.100	1.036	1.056	0.941	0.970	0.900	0.854	0.739	0.901	1.161
CIFG16B15SV24	*NBC 12 News*	1.079	1.080	1.029	1.036	0.935	0.961	0.902	0.857	0.735	0.924	1.130
CIFG16B15SV28	*NBC 12 News*	1.042	1.052	1.012	1.019	0.904	0.944	0.904	0.861	0.740	0.958	1.119
CIFG16B15SV34	*NBC 12 News*	0.982	1.015	0.984	0.981	0.895	0.928	0.873	0.866	0.770	0.927	1.135
CIFG16B15SV38	*NBC 12 News*	0.970	1.003	0.972	0.973	0.888	0.958	0.856	0.885	0.794	0.864	1.135
CIFG16B15SV42	*NBC 12 News*	0.964	0.986	0.958	0.952	0.880	0.887	0.848	0.908	0.822	0.786	1.147
CIFG16B15SV48	*NBC 12 News*	0.968	0.975	0.934	0.950	0.921	0.882	0.852	0.932	0.905	0.763	1.057

TABLE LXXVII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B1SV10	*Sony Demo*	0.773
CIFG16B1SV16	*Sony Demo*	0.743
CIFG16B1SV22	*Sony Demo*	0.712
CIFG16B1SV24	*Sony Demo*	0.700
CIFG16B1SV28	*Sony Demo*	0.682
CIFG16B1SV34	*Sony Demo*	0.684
CIFG16B1SV38	*Sony Demo*	0.710
CIFG16B1SV42	*Sony Demo*	0.734
CIFG16B1SV48	*Sony Demo*	0.772
CIFG16B1SV10	*Silence of the Lambs*	0.815
CIFG16B1SV16	*Silence of the Lambs*	0.835
CIFG16B1SV22	*Silence of the Lambs*	0.831
CIFG16B1SV24	*Silence of the Lambs*	0.828
CIFG16B1SV28	*Silence of the Lambs*	0.821
CIFG16B1SV34	*Silence of the Lambs*	0.817
CIFG16B1SV38	*Silence of the Lambs*	0.820
CIFG16B1SV42	*Silence of the Lambs*	0.825
CIFG16B1SV48	*Silence of the Lambs*	0.816
CIFG16B1SV10	*Star Wars 4*	0.254
CIFG16B1SV16	*Star Wars 4*	0.382
CIFG16B1SV22	*Star Wars 4*	0.522
CIFG16B1SV24	*Star Wars 4*	0.549
CIFG16B1SV28	*Star Wars 4*	0.584
CIFG16B1SV34	*Star Wars 4*	0.604
CIFG16B1SV38	*Star Wars 4*	0.628
CIFG16B1SV42	*Star Wars 4*	0.662
CIFG16B1SV48	*Star Wars 4*	0.702
CIFG16B1SV10	*Tokyo olympics*	0.791
CIFG16B1SV16	*Tokyo olympics*	0.812
CIFG16B1SV22	*Tokyo olympics*	0.838
CIFG16B1SV24	*Tokyo olympics*	0.843
CIFG16B1SV28	*Tokyo olympics*	0.845
CIFG16B1SV34	*Tokyo olympics*	0.844
CIFG16B1SV38	*Tokyo olympics*	0.843
CIFG16B1SV42	*Tokyo olympics*	0.842
CIFG16B1SV48	*Tokyo olympics*	0.836
CIFG16B1SV10	*NBC 12 News*	0.486
CIFG16B1SV16	*NBC 12 News*	0.447
CIFG16B1SV22	*NBC 12 News*	0.464
CIFG16B1SV24	*NBC 12 News*	0.497
CIFG16B1SV28	*NBC 12 News*	0.541
CIFG16B1SV34	*NBC 12 News*	0.573
CIFG16B1SV38	*NBC 12 News*	0.579
CIFG16B1SV42	*NBC 12 News*	0.570
CIFG16B1SV48	*NBC 12 News*	0.585

TABLE LXXVIII: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B3SV10	*Sony Demo*	0.770
CIFG16B3SV16	*Sony Demo*	0.739
CIFG16B3SV22	*Sony Demo*	0.721
CIFG16B3SV24	*Sony Demo*	0.714
CIFG16B3SV28	*Sony Demo*	0.702
CIFG16B3SV34	*Sony Demo*	0.686
CIFG16B3SV38	*Sony Demo*	0.692
CIFG16B3SV42	*Sony Demo*	0.706
CIFG16B3SV48	*Sony Demo*	0.745
CIFG16B3SV10	*Silence of the Lambs*	0.814
CIFG16B3SV16	*Silence of the Lambs*	0.830
CIFG16B3SV22	*Silence of the Lambs*	0.828
CIFG16B3SV24	*Silence of the Lambs*	0.827
CIFG16B3SV28	*Silence of the Lambs*	0.824
CIFG16B3SV34	*Silence of the Lambs*	0.825
CIFG16B3SV38	*Silence of the Lambs*	0.829
CIFG16B3SV42	*Silence of the Lambs*	0.835
CIFG16B3SV48	*Silence of the Lambs*	0.840

TABLE LXXVIII: *continued*

Enc. M.	Video	VT H
CIFG16B3SV10	*Star Wars 4*	0.152
CIFG16B3SV16	*Star Wars 4*	0.324
CIFG16B3SV22	*Star Wars 4*	0.439
CIFG16B3SV24	*Star Wars 4*	0.469
CIFG16B3SV28	*Star Wars 4*	0.506
CIFG16B3SV34	*Star Wars 4*	0.565
CIFG16B3SV38	*Star Wars 4*	0.609
CIFG16B3SV42	*Star Wars 4*	0.653
CIFG16B3SV48	*Star Wars 4*	0.705
CIFG16B3SV10	*Tokyo olympics*	0.795
CIFG16B3SV16	*Tokyo olympics*	0.816
CIFG16B3SV22	*Tokyo olympics*	0.836
CIFG16B3SV24	*Tokyo olympics*	0.840
CIFG16B3SV28	*Tokyo olympics*	0.843
CIFG16B3SV34	*Tokyo olympics*	0.846
CIFG16B3SV38	*Tokyo olympics*	0.847
CIFG16B3SV42	*Tokyo olympics*	0.847
CIFG16B3SV48	*Tokyo olympics*	0.844
CIFG16B3SV10	*NBC 12 News*	0.494
CIFG16B3SV16	*NBC 12 News*	0.458
CIFG16B3SV22	*NBC 12 News*	0.489
CIFG16B3SV24	*NBC 12 News*	0.507
CIFG16B3SV28	*NBC 12 News*	0.539
CIFG16B3SV34	*NBC 12 News*	0.554
CIFG16B3SV38	*NBC 12 News*	0.547
CIFG16B3SV42	*NBC 12 News*	0.525
CIFG16B3SV48	*NBC 12 News*	0.495

TABLE LXXIX: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B7SV10	*Sony Demo*	0.764
CIFG16B7SV16	*Sony Demo*	0.731
CIFG16B7SV22	*Sony Demo*	0.715
CIFG16B7SV24	*Sony Demo*	0.715
CIFG16B7SV28	*Sony Demo*	0.712
CIFG16B7SV34	*Sony Demo*	0.695
CIFG16B7SV38	*Sony Demo*	0.683
CIFG16B7SV42	*Sony Demo*	0.683
CIFG16B7SV48	*Sony Demo*	0.722
CIFG16B7SV10	*Silence of the Lambs*	0.818
CIFG16B7SV16	*Silence of the Lambs*	0.826
CIFG16B7SV22	*Silence of the Lambs*	0.823
CIFG16B7SV24	*Silence of the Lambs*	0.822
CIFG16B7SV28	*Silence of the Lambs*	0.821
CIFG16B7SV34	*Silence of the Lambs*	0.827
CIFG16B7SV38	*Silence of the Lambs*	0.833
CIFG16B7SV42	*Silence of the Lambs*	0.841
CIFG16B7SV48	*Silence of the Lambs*	0.849
CIFG16B7SV10	*Star Wars 4*	0.284
CIFG16B7SV16	*Star Wars 4*	0.378
CIFG16B7SV22	*Star Wars 4*	0.437
CIFG16B7SV24	*Star Wars 4*	0.446
CIFG16B7SV28	*Star Wars 4*	0.461
CIFG16B7SV34	*Star Wars 4*	0.535
CIFG16B7SV38	*Star Wars 4*	0.593
CIFG16B7SV42	*Star Wars 4*	0.649
CIFG16B7SV48	*Star Wars 4*	0.709
CIFG16B7SV10	*Tokyo olympics*	0.797
CIFG16B7SV16	*Tokyo olympics*	0.820
CIFG16B7SV22	*Tokyo olympics*	0.840
CIFG16B7SV24	*Tokyo olympics*	0.841
CIFG16B7SV28	*Tokyo olympics*	0.843
CIFG16B7SV34	*Tokyo olympics*	0.847
CIFG16B7SV38	*Tokyo olympics*	0.850
CIFG16B7SV42	*Tokyo olympics*	0.851
CIFG16B7SV48	*Tokyo olympics*	0.849

TABLE LXXIX: *continued*

Enc. M.	Video	VT H
CIFG16B7SV10	*NBC 12 News*	0.502
CIFG16B7SV16	*NBC 12 News*	0.472
CIFG16B7SV22	*NBC 12 News*	0.524
CIFG16B7SV24	*NBC 12 News*	0.536
CIFG16B7SV28	*NBC 12 News*	0.557
CIFG16B7SV34	*NBC 12 News*	0.570
CIFG16B7SV38	*NBC 12 News*	0.553
CIFG16B7SV42	*NBC 12 News*	0.524
CIFG16B7SV48	*NBC 12 News*	0.464

TABLE LXXX: Hurst parameters estimated from variance time plot.

Enc. M.	Video	VT H
CIFG16B15SV10	*Sony Demo*	0.763
CIFG16B15SV16	*Sony Demo*	0.728
CIFG16B15SV22	*Sony Demo*	0.708
CIFG16B15SV24	*Sony Demo*	0.709
CIFG16B15SV28	*Sony Demo*	0.711
CIFG16B15SV34	*Sony Demo*	0.696
CIFG16B15SV38	*Sony Demo*	0.676
CIFG16B15SV42	*Sony Demo*	0.659
CIFG16B15SV48	*Sony Demo*	0.675
CIFG16B15SV10	*Silence of the Lambs*	0.816
CIFG16B15SV16	*Silence of the Lambs*	0.825
CIFG16B15SV22	*Silence of the Lambs*	0.819
CIFG16B15SV24	*Silence of the Lambs*	0.817
CIFG16B15SV28	*Silence of the Lambs*	0.818
CIFG16B15SV34	*Silence of the Lambs*	0.828
CIFG16B15SV38	*Silence of the Lambs*	0.836
CIFG16B15SV42	*Silence of the Lambs*	0.843
CIFG16B15SV48	*Silence of the Lambs*	0.854
CIFG16B15SV10	*Star Wars 4*	0.340
CIFG16B15SV16	*Star Wars 4*	0.453
CIFG16B15SV22	*Star Wars 4*	0.460
CIFG16B15SV24	*Star Wars 4*	0.457
CIFG16B15SV28	*Star Wars 4*	0.450
CIFG16B15SV34	*Star Wars 4*	0.507
CIFG16B15SV38	*Star Wars 4*	0.573
CIFG16B15SV42	*Star Wars 4*	0.634
CIFG16B15SV48	*Star Wars 4*	0.699
CIFG16B15SV10	*Tokyo olympics*	0.798
CIFG16B15SV16	*Tokyo olympics*	0.820
CIFG16B15SV22	*Tokyo olympics*	0.841
CIFG16B15SV24	*Tokyo olympics*	0.842
CIFG16B15SV28	*Tokyo olympics*	0.842
CIFG16B15SV34	*Tokyo olympics*	0.846
CIFG16B15SV38	*Tokyo olympics*	0.851
CIFG16B15SV42	*Tokyo olympics*	0.854
CIFG16B15SV48	*Tokyo olympics*	0.853
CIFG16B15SV10	*NBC 12 News*	0.504
CIFG16B15SV16	*NBC 12 News*	0.482
CIFG16B15SV22	*NBC 12 News*	0.534
CIFG16B15SV24	*NBC 12 News*	0.552
CIFG16B15SV28	*NBC 12 News*	0.568
CIFG16B15SV34	*NBC 12 News*	0.565
CIFG16B15SV38	*NBC 12 News*	0.544
CIFG16B15SV42	*NBC 12 News*	0.502
CIFG16B15SV48	*NBC 12 News*	0.407

APPENDIX IV
QUALITY STATISTICS

A. H.264/AVC

TABLE LXXXI: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B1F10	*Sony Demo*	49.843	50.596	0.368	0.071	50.956	49.962	50.594	0.287	0.067	19.861
CIFG16B1F16	*Sony Demo*	45.333	46.167	0.410	0.079	24.646	45.428	46.166	0.346	0.076	18.786
CIFG16B1F22	*Sony Demo*	40.909	41.843	0.436	0.093	28.815	40.962	41.830	0.399	0.091	20.264
CIFG16B1F24	*Sony Demo*	39.341	40.309	0.446	0.098	29.637	39.385	40.296	0.417	0.096	21.173
CIFG16B1F28	*Sony Demo*	36.487	37.497	0.465	0.107	33.785	36.521	37.483	0.444	0.105	23.164
CIFG16B1F34	*Sony Demo*	32.399	33.380	0.501	0.113	37.372	32.427	33.366	0.488	0.110	24.349
CIFG16B1F38	*Sony Demo*	29.902	30.860	0.519	0.118	38.056	29.927	30.847	0.508	0.115	24.843
CIFG16B1F42	*Sony Demo*	27.630	28.578	0.534	0.125	39.784	27.654	28.566	0.525	0.122	26.481
CIFG16B1F48	*Sony Demo*	24.514	25.498	0.551	0.145	43.570	24.536	25.483	0.546	0.140	29.736
CIFG16B1F10	*Silence o/t L.*	50.721	50.973	0.264	0.051	50.660	50.809	50.973	0.164	0.047	48.977
CIFG16B1F16	*Silence o/t L.*	47.476	47.894	0.402	0.062	56.028	47.530	47.894	0.353	0.059	54.277
CIFG16B1F22	*Silence o/t L.*	44.035	44.711	0.565	0.077	61.191	44.075	44.712	0.535	0.075	59.503
CIFG16B1F24	*Silence o/t L.*	42.766	43.548	0.623	0.082	62.969	42.808	43.548	0.596	0.080	61.318
CIFG16B1F28	*Silence o/t L.*	40.337	41.295	0.705	0.095	65.755	40.383	41.295	0.681	0.092	64.338
CIFG16B1F34	*Silence o/t L.*	36.658	37.815	0.802	0.112	70.422	36.716	37.815	0.775	0.109	68.769
CIFG16B1F38	*Silence o/t L.*	34.237	35.443	0.846	0.117	73.120	34.301	35.444	0.818	0.112	68.015
CIFG16B1F42	*Silence o/t L.*	31.948	33.269	0.884	0.135	75.668	32.026	33.269	0.852	0.130	70.364
CIFG16B1F48	*Silence o/t L.*	28.630	29.986	0.882	0.156	79.588	28.727	29.986	0.844	0.150	73.974
CIFG16B1F10	*Star Wars 4*	51.360	51.738	0.265	0.066	49.947	51.442	51.737	0.184	0.063	47.985
CIFG16B1F16	*Star Wars 4*	47.851	48.314	0.315	0.077	54.955	47.890	48.314	0.283	0.075	52.848
CIFG16B1F22	*Star Wars 4*	44.182	44.776	0.389	0.091	59.161	44.218	44.775	0.366	0.088	57.423
CIFG16B1F24	*Star Wars 4*	42.852	43.502	0.413	0.097	60.467	42.891	43.501	0.389	0.094	59.137
CIFG16B1F28	*Star Wars 4*	40.368	41.113	0.447	0.109	63.170	40.411	41.113	0.422	0.106	62.039
CIFG16B1F34	*Star Wars 4*	36.725	37.614	0.484	0.131	67.536	36.780	37.614	0.453	0.128	66.050
CIFG16B1F38	*Star Wars 4*	34.366	35.334	0.502	0.146	70.249	34.427	35.334	0.467	0.143	68.135
CIFG16B1F42	*Star Wars 4*	32.046	33.037	0.515	0.158	73.565	32.115	33.037	0.471	0.153	67.693
CIFG16B1F48	*Star Wars 4*	28.580	29.639	0.543	0.187	78.492	28.669	29.639	0.473	0.179	70.432
CIFG16B1F10	*Tokyo Olympics*	50.790	51.005	0.291	0.031	49.790	50.938	51.005	0.124	0.021	38.152
CIFG16B1F16	*Tokyo Olympics*	46.183	46.497	0.344	0.042	55.588	46.312	46.497	0.224	0.035	41.308
CIFG16B1F22	*Tokyo Olympics*	42.497	42.968	0.432	0.055	61.244	42.565	42.968	0.376	0.052	46.432
CIFG16B1F24	*Tokyo Olympics*	41.229	41.802	0.487	0.061	63.517	41.294	41.802	0.439	0.058	47.684
CIFG16B1F28	*Tokyo Olympics*	38.819	39.575	0.577	0.073	66.634	38.885	39.575	0.537	0.070	50.821
CIFG16B1F34	*Tokyo Olympics*	34.968	35.953	0.683	0.091	71.186	35.050	35.953	0.647	0.087	55.331
CIFG16B1F38	*Tokyo Olympics*	32.355	33.397	0.723	0.098	74.119	32.441	33.397	0.690	0.094	55.977
CIFG16B1F42	*Tokyo Olympics*	29.908	31.036	0.763	0.112	77.366	30.009	31.036	0.725	0.107	58.888
CIFG16B1F48	*Tokyo Olympics*	26.506	27.574	0.728	0.126	80.954	26.605	27.574	0.693	0.119	62.248
CIFG16B1F10	*NBC 12 News*	48.843	49.019	0.268	0.026	5.720	49.015	49.018	0.038	0.003	1.022
CIFG16B1F16	*NBC 12 News*	43.855	44.042	0.284	0.029	6.566	44.022	44.042	0.095	0.010	2.686
CIFG16B1F22	*NBC 12 News*	40.097	40.292	0.303	0.032	10.205	40.184	40.292	0.219	0.024	5.636
CIFG16B1F24	*NBC 12 News*	38.891	39.118	0.329	0.036	11.850	38.965	39.118	0.264	0.030	6.753
CIFG16B1F28	*NBC 12 News*	36.622	36.921	0.381	0.044	14.890	36.688	36.921	0.329	0.039	9.984
CIFG16B1F34	*NBC 12 News*	33.017	33.393	0.420	0.055	18.688	33.082	33.393	0.378	0.050	13.673
CIFG16B1F38	*NBC 12 News*	30.527	30.928	0.430	0.063	21.050	30.593	30.928	0.391	0.057	16.317
CIFG16B1F42	*NBC 12 News*	28.071	28.478	0.431	0.069	21.808	28.143	28.478	0.387	0.062	17.982
CIFG16B1F48	*NBC 12 News*	24.486	24.872	0.412	0.079	25.515	24.568	24.872	0.358	0.070	21.025

TABLE LXXXII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B3F10	*Sony Demo*	49.449	50.227	0.362	0.073	50.976	49.565	50.226	0.295	0.069	20.410
CIFG16B3F16	*Sony Demo*	44.964	45.853	0.419	0.082	23.374	45.061	45.852	0.364	0.080	19.418
CIFG16B3F22	*Sony Demo*	40.581	41.589	0.460	0.097	28.245	40.647	41.577	0.420	0.094	20.753
CIFG16B3F24	*Sony Demo*	39.062	40.097	0.467	0.102	30.236	39.119	40.085	0.433	0.100	21.592
CIFG16B3F28	*Sony Demo*	36.255	37.309	0.471	0.111	34.075	36.301	37.297	0.446	0.108	23.248
CIFG16B3F34	*Sony Demo*	32.162	33.173	0.490	0.118	38.659	32.201	33.161	0.472	0.115	25.918
CIFG16B3F38	*Sony Demo*	29.666	30.648	0.510	0.123	37.994	29.702	30.637	0.494	0.120	25.535
CIFG16B3F42	*Sony Demo*	27.367	28.362	0.544	0.131	40.711	27.405	28.350	0.527	0.127	27.313
CIFG16B3F48	*Sony Demo*	24.332	25.356	0.555	0.150	44.465	24.368	25.343	0.542	0.145	30.523
CIFG16B3F10	*Silence o/t L.*	50.263	50.559	0.288	0.053	50.607	50.373	50.559	0.191	0.048	49.711
CIFG16B3F16	*Silence o/t L.*	47.143	47.624	0.441	0.065	55.939	47.212	47.624	0.388	0.062	55.021

TABLE LXXXII: *continued*

CIFG16B3F22	*Silence o/t L.*	43.798	44.527	0.596	0.079	61.228	43.852	44.528	0.560	0.076	60.189
CIFG16B3F24	*Silence o/t L.*	42.547	43.374	0.646	0.084	62.946	42.602	43.375	0.613	0.081	61.920
CIFG16B3F28	*Silence o/t L.*	40.111	41.114	0.719	0.096	65.639	40.171	41.114	0.689	0.093	64.728
CIFG16B3F34	*Silence o/t L.*	36.387	37.598	0.809	0.115	70.195	36.462	37.598	0.775	0.111	69.235
CIFG16B3F38	*Silence o/t L.*	33.947	35.216	0.855	0.120	73.187	34.031	35.216	0.820	0.115	68.487
CIFG16B3F42	*Silence o/t L.*	31.634	33.057	0.902	0.139	75.796	31.737	33.058	0.862	0.133	70.935
CIFG16B3F48	*Silence o/t L.*	28.365	29.911	0.946	0.161	79.631	28.506	29.911	0.887	0.154	74.853
CIFG16B3F10	*Star Wars 4*	51.021	51.425	0.277	0.067	50.103	51.113	51.424	0.200	0.064	48.548
CIFG16B3F16	*Star Wars 4*	47.636	48.120	0.331	0.078	55.292	47.681	48.119	0.295	0.075	53.278
CIFG16B3F22	*Star Wars 4*	44.013	44.621	0.394	0.092	59.286	44.055	44.620	0.367	0.089	57.510
CIFG16B3F24	*Star Wars 4*	42.690	43.349	0.417	0.097	60.665	42.734	43.349	0.389	0.094	59.090
CIFG16B3F28	*Star Wars 4*	40.186	40.950	0.453	0.110	63.219	40.234	40.950	0.424	0.107	61.841
CIFG16B3F34	*Star Wars 4*	36.506	37.427	0.500	0.132	67.408	36.569	37.427	0.463	0.129	65.957
CIFG16B3F38	*Star Wars 4*	34.135	35.153	0.524	0.148	70.441	34.206	35.152	0.483	0.144	68.692
CIFG16B3F42	*Star Wars 4*	31.765	32.837	0.554	0.161	73.712	31.852	32.837	0.500	0.155	68.404
CIFG16B3F48	*Star Wars 4*	28.282	29.473	0.622	0.191	80.443	28.408	29.472	0.526	0.183	71.650
CIFG16B3F10	*Tokyo Olympics*	50.126	50.374	0.286	0.034	49.922	50.297	50.374	0.135	0.022	34.031
CIFG16B3F16	*Tokyo Olympics*	45.553	45.909	0.346	0.046	55.561	45.699	45.909	0.239	0.037	41.005
CIFG16B3F22	*Tokyo Olympics*	42.068	42.595	0.457	0.058	61.337	42.154	42.595	0.399	0.054	46.514
CIFG16B3F24	*Tokyo Olympics*	40.840	41.461	0.508	0.064	63.621	40.922	41.461	0.456	0.060	48.657
CIFG16B3F28	*Tokyo Olympics*	38.438	39.231	0.589	0.076	66.803	38.521	39.231	0.544	0.072	51.690
CIFG16B3F34	*Tokyo Olympics*	34.554	35.558	0.677	0.094	71.633	34.655	35.557	0.636	0.089	55.880
CIFG16B3F38	*Tokyo Olympics*	31.925	32.978	0.709	0.101	74.202	32.031	32.977	0.670	0.096	56.168
CIFG16B3F42	*Tokyo Olympics*	29.421	30.566	0.741	0.117	77.301	29.544	30.566	0.699	0.110	59.237
CIFG16B3F48	*Tokyo Olympics*	25.968	27.129	0.740	0.134	81.011	26.104	27.129	0.693	0.126	63.033
CIFG16B3F10	*NBC 12 News*	48.362	48.516	0.229	0.026	5.787	48.512	48.516	0.042	0.004	1.098
CIFG16B3F16	*NBC 12 News*	43.404	43.564	0.244	0.029	6.698	43.540	43.564	0.101	0.011	2.887
CIFG16B3F22	*NBC 12 News*	39.711	39.918	0.304	0.034	10.244	39.798	39.918	0.232	0.026	5.928
CIFG16B3F24	*NBC 12 News*	38.554	38.796	0.334	0.038	12.001	38.631	38.796	0.275	0.031	7.226
CIFG16B3F28	*NBC 12 News*	36.309	36.630	0.393	0.046	14.894	36.382	36.630	0.343	0.040	10.726
CIFG16B3F34	*NBC 12 News*	32.731	33.131	0.437	0.058	18.748	32.807	33.131	0.388	0.052	14.143
CIFG16B3F38	*NBC 12 News*	30.266	30.686	0.441	0.065	20.722	30.342	30.686	0.395	0.058	16.491
CIFG16B3F42	*NBC 12 News*	27.780	28.216	0.447	0.072	21.868	27.867	28.216	0.394	0.064	17.531
CIFG16B3F48	*NBC 12 News*	24.169	24.603	0.444	0.084	25.235	24.275	24.603	0.372	0.073	21.261

TABLE LXXXIII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B7F10	*Sony Demo*	49.217	50.006	0.353	0.074	51.124	49.326	49.998	0.296	0.070	21.047
CIFG16B7F16	*Sony Demo*	44.781	45.699	0.421	0.084	24.729	44.869	45.692	0.375	0.081	19.928
CIFG16B7F22	*Sony Demo*	40.435	41.489	0.472	0.099	29.363	40.501	41.482	0.437	0.097	21.039
CIFG16B7F24	*Sony Demo*	38.932	40.015	0.482	0.104	31.431	38.992	40.007	0.450	0.102	21.209
CIFG16B7F28	*Sony Demo*	36.114	37.216	0.487	0.113	34.459	36.167	37.209	0.460	0.111	21.747
CIFG16B7F34	*Sony Demo*	32.048	33.089	0.485	0.121	37.717	32.095	33.082	0.466	0.118	24.234
CIFG16B7F38	*Sony Demo*	29.519	30.521	0.495	0.127	38.223	29.565	30.514	0.478	0.123	25.692
CIFG16B7F42	*Sony Demo*	27.129	28.141	0.525	0.136	45.105	27.183	28.134	0.506	0.131	27.523
CIFG16B7F48	*Sony Demo*	23.991	25.100	0.583	0.158	44.064	24.049	25.091	0.561	0.152	31.382
CIFG16B7F10	*Silence o/t L.*	50.004	50.306	0.284	0.053	50.628	50.113	50.306	0.202	0.048	50.103
CIFG16B7F16	*Silence o/t L.*	46.917	47.420	0.451	0.065	55.946	46.989	47.420	0.405	0.062	55.407
CIFG16B7F22	*Silence o/t L.*	43.614	44.358	0.604	0.079	61.078	43.671	44.358	0.570	0.076	60.477
CIFG16B7F24	*Silence o/t L.*	42.366	43.201	0.648	0.084	62.788	42.426	43.201	0.616	0.081	62.123
CIFG16B7F28	*Silence o/t L.*	39.903	40.905	0.716	0.096	65.811	39.969	40.905	0.685	0.093	65.161
CIFG16B7F34	*Silence o/t L.*	36.082	37.295	0.794	0.116	70.364	36.168	37.295	0.759	0.111	69.624
CIFG16B7F38	*Silence o/t L.*	33.599	34.872	0.830	0.122	73.201	33.695	34.873	0.794	0.116	68.961
CIFG16B7F42	*Silence o/t L.*	31.194	32.664	0.881	0.144	75.895	31.314	32.664	0.839	0.137	71.428
CIFG16B7F48	*Silence o/t L.*	27.859	29.620	0.980	0.170	79.926	28.034	29.620	0.914	0.162	75.302
CIFG16B7F10	*Tokyo Olympics*	49.828	50.067	0.262	0.035	49.843	49.982	50.067	0.145	0.023	33.779
CIFG16B7F16	*Tokyo Olympics*	45.250	45.600	0.330	0.046	55.588	45.380	45.600	0.247	0.038	40.328
CIFG16B7F22	*Tokyo Olympics*	41.803	42.347	0.460	0.059	61.109	41.888	42.347	0.410	0.055	45.895
CIFG16B7F24	*Tokyo Olympics*	40.594	41.227	0.510	0.065	63.567	40.676	41.227	0.464	0.061	48.073
CIFG16B7F28	*Tokyo Olympics*	38.172	38.976	0.592	0.077	66.941	38.258	38.976	0.550	0.073	51.474
CIFG16B7F34	*Tokyo Olympics*	34.245	35.240	0.668	0.094	72.127	34.349	35.240	0.628	0.089	56.444
CIFG16B7F38	*Tokyo Olympics*	31.573	32.619	0.695	0.103	74.651	31.685	32.619	0.656	0.097	56.520
CIFG16B7F42	*Tokyo Olympics*	28.967	30.118	0.720	0.120	77.134	29.099	30.118	0.678	0.113	59.269
CIFG16B7F48	*Tokyo Olympics*	25.356	26.583	0.729	0.143	81.519	25.508	26.583	0.681	0.133	63.434
CIFG16B7F10	*NBC 12 News*	48.142	48.274	0.197	0.025	5.969	48.269	48.274	0.045	0.004	1.186
CIFG16B7F16	*NBC 12 News*	43.213	43.349	0.215	0.027	6.746	43.323	43.349	0.106	0.011	2.975
CIFG16B7F22	*NBC 12 News*	39.485	39.691	0.297	0.035	10.234	39.565	39.691	0.238	0.027	6.062
CIFG16B7F24	*NBC 12 News*	38.345	38.588	0.330	0.038	11.789	38.417	38.588	0.280	0.032	7.191

TABLE LXXXIII: *continued*

CIFG16B7F28	*NBC 12 News*	36.107	36.433	0.393	0.047	15.252	36.177	36.433	0.349	0.041	11.005
CIFG16B7F34	*NBC 12 News*	32.530	32.944	0.445	0.059	18.792	32.610	32.944	0.397	0.053	14.701
CIFG16B7F38	*NBC 12 News*	30.079	30.514	0.449	0.066	20.360	30.162	30.514	0.400	0.059	16.695
CIFG16B7F42	*NBC 12 News*	27.554	28.011	0.458	0.074	22.041	27.649	28.010	0.401	0.066	16.883
CIFG16B7F48	*NBC 12 News*	23.815	24.298	0.474	0.089	26.311	23.936	24.298	0.396	0.077	21.403

TABLE LXXXIV: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B15F10	*Sony Demo*	49.076	49.865	0.346	0.075	51.067	49.183	49.864	0.297	0.071	21.506
CIFG16B15F16	*Sony Demo*	44.662	45.590	0.420	0.085	24.892	44.751	45.589	0.381	0.082	20.330
CIFG16B15F22	*Sony Demo*	40.334	41.399	0.472	0.100	29.771	40.401	41.398	0.442	0.098	21.738
CIFG16B15F24	*Sony Demo*	38.841	39.927	0.482	0.105	31.534	38.904	39.926	0.454	0.103	21.652
CIFG16B15F28	*Sony Demo*	35.953	37.060	0.494	0.114	34.348	36.012	37.059	0.466	0.111	21.505
CIFG16B15F34	*Sony Demo*	31.800	32.857	0.492	0.123	37.439	31.857	32.856	0.467	0.120	23.027
CIFG16B15F38	*Sony Demo*	29.247	30.233	0.487	0.126	27.040	29.300	30.232	0.469	0.123	22.615
CIFG16B15F42	*Sony Demo*	26.749	27.748	0.508	0.137	31.248	26.808	27.747	0.489	0.133	24.237
CIFG16B15F48	*Sony Demo*	23.478	24.618	0.574	0.164	35.979	23.548	24.618	0.550	0.159	29.087
CIFG16B15F10	*Silence o/t L.*	49.855	50.159	0.275	0.054	50.629	49.961	50.159	0.205	0.049	50.261
CIFG16B15F16	*Silence o/t L.*	46.764	47.271	0.450	0.065	55.970	46.837	47.271	0.409	0.062	55.567
CIFG16B15F22	*Silence o/t L.*	43.455	44.191	0.599	0.078	61.083	43.515	44.191	0.567	0.076	60.678
CIFG16B15F24	*Silence o/t L.*	42.192	43.008	0.635	0.084	62.718	42.255	43.008	0.605	0.081	62.309
CIFG16B15F28	*Silence o/t L.*	39.662	40.620	0.696	0.094	65.966	39.730	40.620	0.667	0.092	65.432
CIFG16B15F34	*Silence o/t L.*	35.686	36.817	0.754	0.113	70.450	35.776	36.817	0.721	0.110	69.797
CIFG16B15F38	*Silence o/t L.*	33.094	34.270	0.776	0.119	73.299	33.191	34.270	0.740	0.115	69.188
CIFG16B15F42	*Silence o/t L.*	30.536	31.921	0.816	0.143	76.189	30.649	31.921	0.774	0.138	71.833
CIFG16B15F48	*Silence o/t L.*	27.022	28.858	0.940	0.177	80.105	27.161	28.858	0.887	0.171	75.698
CIFG16B15F10	*Star Wars 4*	50.671	51.079	0.273	0.066	49.668	50.763	51.079	0.214	0.062	49.109
CIFG16B15F16	*Star Wars 4*	47.250	47.746	0.345	0.077	55.778	47.300	47.746	0.312	0.074	54.017
CIFG16B15F22	*Star Wars 4*	43.641	44.224	0.391	0.089	59.392	43.688	44.224	0.362	0.087	58.166
CIFG16B15F24	*Star Wars 4*	42.318	42.947	0.408	0.095	60.803	42.366	42.947	0.380	0.092	59.511
CIFG16B15F28	*Star Wars 4*	39.748	40.478	0.444	0.107	63.074	39.800	40.478	0.415	0.105	62.248
CIFG16B15F34	*Star Wars 4*	35.999	36.904	0.502	0.128	67.506	36.072	36.904	0.462	0.125	66.714
CIFG16B15F38	*Star Wars 4*	33.536	34.569	0.537	0.147	70.661	33.620	34.569	0.490	0.144	69.653
CIFG16B15F42	*Star Wars 4*	30.949	32.081	0.584	0.162	74.458	31.044	32.081	0.527	0.158	70.237
CIFG16B15F48	*Star Wars 4*	27.065	28.502	0.704	0.204	81.686	27.182	28.502	0.628	0.197	73.985
CIFG16B15F10	*Tokyo Olympics*	49.690	49.917	0.246	0.034	49.844	49.830	49.916	0.150	0.023	33.375
CIFG16B15F16	*Tokyo Olympics*	45.096	45.436	0.319	0.045	55.656	45.215	45.436	0.252	0.037	40.478
CIFG16B15F22	*Tokyo Olympics*	41.641	42.185	0.460	0.058	60.969	41.723	42.185	0.416	0.054	46.024
CIFG16B15F24	*Tokyo Olympics*	40.438	41.070	0.509	0.064	63.312	40.518	41.070	0.468	0.060	48.038
CIFG16B15F28	*Tokyo Olympics*	37.966	38.759	0.589	0.076	66.991	38.050	38.759	0.551	0.072	51.590
CIFG16B15F34	*Tokyo Olympics*	33.947	34.899	0.654	0.092	72.402	34.049	34.899	0.617	0.087	56.884
CIFG16B15F38	*Tokyo Olympics*	31.204	32.197	0.677	0.100	75.455	31.315	32.197	0.638	0.094	57.314
CIFG16B15F42	*Tokyo Olympics*	28.484	29.580	0.695	0.119	77.985	28.614	29.580	0.653	0.112	59.451
CIFG16B15F48	*Tokyo Olympics*	24.680	25.887	0.698	0.146	81.948	24.822	25.887	0.651	0.138	63.763
CIFG16B15F10	*NBC 12 News*	48.034	48.153	0.176	0.024	6.168	48.147	48.152	0.048	0.004	1.321
CIFG16B15F16	*NBC 12 News*	43.128	43.253	0.200	0.027	6.955	43.224	43.253	0.111	0.012	3.012
CIFG16B15F22	*NBC 12 News*	39.344	39.546	0.289	0.035	10.087	39.417	39.546	0.240	0.027	6.219
CIFG16B15F24	*NBC 12 News*	38.201	38.441	0.324	0.039	11.945	38.269	38.441	0.281	0.032	7.465
CIFG16B15F28	*NBC 12 News*	35.939	36.261	0.388	0.047	15.243	36.005	36.261	0.350	0.041	11.170
CIFG16B15F34	*NBC 12 News*	32.290	32.694	0.436	0.059	16.996	32.368	32.694	0.394	0.052	15.341
CIFG16B15F38	*NBC 12 News*	29.775	30.198	0.442	0.066	19.167	29.860	30.198	0.395	0.058	17.452
CIFG16B15F42	*NBC 12 News*	27.161	27.610	0.453	0.074	21.571	27.261	27.610	0.396	0.065	17.245
CIFG16B15F48	*NBC 12 News*	23.288	23.785	0.482	0.091	25.896	23.409	23.785	0.407	0.079	22.012

TABLE LXXXV: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG12B2F10	*Sony Demo*	49.652	50.384	0.356	0.070	50.959	49.757	50.380	0.287	0.066	19.823
CIFG12B2F16	*Sony Demo*	45.308	46.159	0.418	0.079	24.751	45.401	46.156	0.359	0.077	18.994
CIFG12B2F22	*Sony Demo*	40.832	41.798	0.451	0.094	29.100	40.892	41.794	0.412	0.092	20.315
CIFG12B2F24	*Sony Demo*	39.282	40.284	0.459	0.100	31.417	39.333	40.280	0.427	0.098	20.839
CIFG12B2F28	*Sony Demo*	36.426	37.464	0.468	0.110	34.539	36.466	37.464	0.446	0.108	24.769
CIFG12B2F34	*Sony Demo*	32.284	33.329	0.495	0.121	37.497	32.314	33.324	0.481	0.119	24.279
CIFG12B2F38	*Sony Demo*	29.730	30.731	0.516	0.124	33.602	29.756	30.726	0.505	0.122	25.496
CIFG12B2F42	*Sony Demo*	27.408	28.405	0.541	0.131	35.724	27.433	28.400	0.531	0.128	26.974

TABLE LXXXV: *continued*

CIFG12B2F48	*Sony Demo*	24.336	25.381	0.564	0.151	37.886	24.359	25.375	0.559	0.148	29.169
CIFG12B2F10	*Silence o/t L.*	50.436	50.668	0.260	0.045	50.474	50.514	50.668	0.180	0.041	49.585
CIFG12B2F16	*Silence o/t L.*	47.370	47.792	0.424	0.055	55.767	47.429	47.792	0.375	0.053	54.806
CIFG12B2F22	*Silence o/t L.*	43.942	44.611	0.581	0.068	60.993	43.987	44.611	0.547	0.066	59.873
CIFG12B2F24	*Silence o/t L.*	42.675	43.444	0.632	0.074	62.649	42.722	43.445	0.601	0.072	61.510
CIFG12B2F28	*Silence o/t L.*	40.229	41.152	0.702	0.084	65.610	40.277	41.153	0.676	0.082	64.523
CIFG12B2F34	*Silence o/t L.*	36.522	37.624	0.786	0.100	70.039	36.578	37.625	0.761	0.097	68.998
CIFG12B2F38	*Silence o/t L.*	34.078	35.247	0.833	0.106	73.206	34.141	35.248	0.807	0.103	67.246
CIFG12B2F42	*Silence o/t L.*	31.791	33.095	0.888	0.119	75.335	31.870	33.095	0.859	0.115	69.518
CIFG12B2F48	*Silence o/t L.*	28.557	29.972	0.929	0.139	79.432	28.661	29.972	0.888	0.134	73.359
720pG12B2FxT10	*Sony Demo*	51.100	52.136	0.366	0.087	59.077	51.166	52.132	0.329	0.085	24.097
720pG12B2FxT22	*Sony Demo*	42.923	44.069	0.455	0.103	68.595	42.993	44.065	0.419	0.100	24.870
720pG12B2FxT28	*Sony Demo*	38.951	40.186	0.528	0.112	49.802	39.015	40.181	0.497	0.109	26.866
720pG12B2FxT34	*Sony Demo*	35.321	36.277	0.520	0.097	36.863	35.367	36.274	0.502	0.094	18.456
720pG12B2FxT38	*Sony Demo*	32.927	33.826	0.522	0.098	23.958	32.969	33.823	0.509	0.095	17.932
720pG12B2FxT42	*Sony Demo*	30.646	31.668	0.529	0.119	47.765	30.695	31.665	0.514	0.116	24.811
720pG12B2FxT48	*Sony Demo*	27.070	27.724	0.527	0.090	13.933	27.125	27.722	0.505	0.086	11.534
720pG12B2FxT10	*Terminator 2*	50.616	50.811	0.272	0.028	29.760	50.720	50.811	0.182	0.019	10.871
720pG12B2FxT22	*Terminator 2*	43.621	43.923	0.367	0.039	38.756	43.708	43.924	0.310	0.032	12.853
720pG12B2FxT28	*Terminator 2*	40.463	40.867	0.441	0.047	43.089	40.573	40.867	0.379	0.040	14.347
720pG12B2FxT34	*Terminator 2*	36.954	37.465	0.498	0.057	21.498	37.128	37.465	0.409	0.046	14.627
720pG12B2FxT38	*Terminator 2*	34.519	35.066	0.515	0.063	24.292	34.723	35.066	0.412	0.050	16.674
720pG12B2FxT42	*Terminator 2*	31.998	32.596	0.535	0.072	52.649	32.253	32.596	0.403	0.054	14.536
720pG12B2FxT48	*Terminator 2*	28.093	28.718	0.588	0.080	18.541	28.387	28.718	0.397	0.060	11.751

TABLE LXXXVI: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B3FRC1	*Sony Demo*	37.383	42.864	2.226	0.249	74.348	37.483	42.837	2.242	0.246	58.753
CIFG16B3FRC2	*Sony Demo*	32.415	38.134	1.563	0.308	71.894	32.480	38.102	1.555	0.305	60.660
CIFG16B3FRC3	*Sony Demo*	26.858	30.832	0.867	0.331	68.836	26.912	30.799	0.855	0.327	60.711
CIFG16B3FRC1	*Silence o/t L.*	38.229	44.635	4.704	0.135	78.872	38.417	44.634	4.626	0.132	77.901
CIFG16B3FRC2	*Silence o/t L.*	36.398	41.595	2.939	0.154	80.303	36.624	41.594	2.740	0.151	78.420
CIFG16B3FRC3	*Silence o/t L.*	31.581	36.050	1.887	0.188	80.369	31.766	36.050	1.822	0.184	78.964
CIFG16B3FRC1	*Star Wars 4*	40.261	44.350	3.026	0.145	77.744	40.452	44.349	2.869	0.142	74.503
CIFG16B3FRC2	*Star Wars 4*	36.630	40.667	1.986	0.170	77.525	36.814	40.666	1.867	0.167	75.288
CIFG16B3FRC3	*Star Wars 4*	31.894	35.206	1.277	0.202	79.145	32.069	35.204	1.168	0.198	75.299
CIFG16B3FRC1	*Tokyo Olympics*	38.260	42.184	3.272	0.124	81.324	38.516	42.184	3.035	0.120	66.791
CIFG16B3FRC2	*Tokyo Olympics*	34.618	39.040	2.386	0.153	81.307	34.834	39.040	2.281	0.149	68.392
CIFG16B3FRC3	*Tokyo Olympics*	29.647	33.532	1.497	0.193	81.908	29.843	33.532	1.437	0.188	65.426
CIFG16B3FRC1	*NBC 12 News*	38.263	39.613	1.263	0.078	27.415	38.487	39.613	1.124	0.070	21.120
CIFG16B3FRC2	*NBC 12 News*	34.300	36.403	1.688	0.103	28.773	34.520	36.403	1.530	0.098	23.041
CIFG16B3FRC3	*NBC 12 News*	29.007	30.810	1.056	0.130	28.699	29.213	30.810	0.933	0.123	22.475

B. MPEG–4 Part 2

TABLE LXXXVII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B1Mp01	*Sony Demo*	49.942	50.438	0.270	0.056	20.811	49.948	50.437	0.268	0.056	15.372
CIFG16B1Mp02	*Sony Demo*	43.961	44.722	0.375	0.078	25.164	43.996	44.721	0.356	0.077	18.036
CIFG16B1Mp04	*Sony Demo*	38.962	39.848	0.437	0.093	31.081	38.993	39.847	0.422	0.092	19.744
CIFG16B1Mp08	*Sony Demo*	34.415	35.303	0.491	0.099	36.176	34.439	35.301	0.482	0.097	21.953
CIFG16B1Mp12	*Sony Demo*	32.078	33.016	0.527	0.107	30.845	32.097	33.015	0.521	0.105	24.513
CIFG16B1Mp16	*Sony Demo*	30.595	31.591	0.558	0.114	32.263	30.613	31.590	0.555	0.112	25.673
CIFG16B1Mp20	*Sony Demo*	29.539	30.477	0.580	0.107	22.031	29.555	30.476	0.577	0.106	20.265
CIFG16B1Mp24	*Sony Demo*	28.768	29.853	0.606	0.125	42.570	28.785	29.852	0.604	0.122	26.191
CIFG16B1Mp28	*Sony Demo*	28.149	29.254	0.623	0.127	35.540	28.166	29.252	0.621	0.124	27.501
CIFG16B1Mp01	*Silence o/t L.*	50.188	50.263	0.142	0.023	49.262	50.197	50.263	0.131	0.021	29.717
CIFG16B1Mp02	*Silence o/t L.*	46.295	46.720	0.452	0.045	56.436	46.322	46.720	0.434	0.042	33.400
CIFG16B1Mp04	*Silence o/t L.*	42.500	43.279	0.654	0.064	68.451	42.533	43.279	0.635	0.062	39.146
CIFG16B1Mp08	*Silence o/t L.*	38.808	39.886	0.814	0.080	68.855	38.840	39.886	0.803	0.078	44.128
CIFG16B1Mp12	*Silence o/t L.*	36.840	38.038	0.908	0.082	20.423	36.873	38.038	0.900	0.081	19.270
CIFG16B1Mp16	*Silence o/t L.*	35.636	37.018	0.998	0.091	21.890	35.672	37.018	0.991	0.089	20.857
CIFG16B1Mp20	*Silence o/t L.*	34.753	36.238	1.064	0.094	24.864	34.794	36.237	1.059	0.092	19.990
CIFG16B1Mp24	*Silence o/t L.*	34.115	35.822	1.130	0.110	73.608	34.163	35.822	1.125	0.107	50.353
CIFG16B1Mp28	*Silence o/t L.*	33.551	35.249	1.165	0.104	24.647	33.603	35.249	1.161	0.101	23.712
CIFG16B1Mp01	*Star Wars 4*	51.045	51.174	0.159	0.031	48.592	51.054	51.174	0.151	0.028	27.659
CIFG16B1Mp02	*Star Wars 4*	46.582	46.925	0.401	0.048	63.772	46.620	46.925	0.308	0.044	35.115
CIFG16B1Mp04	*Star Wars 4*	42.511	43.063	0.650	0.064	72.369	42.564	43.063	0.406	0.060	40.111
CIFG16B1Mp08	*Star Wars 4*	38.730	39.449	0.556	0.081	72.585	38.777	39.449	0.465	0.077	44.397
CIFG16B1Mp12	*Star Wars 4*	36.674	37.350	0.576	0.071	32.393	36.719	37.350	0.480	0.069	16.087
CIFG16B1Mp16	*Star Wars 4*	35.431	36.165	0.557	0.077	32.016	35.474	36.165	0.501	0.075	17.422
CIFG16B1Mp20	*Star Wars 4*	34.561	35.430	0.564	0.102	76.577	34.606	35.430	0.515	0.098	48.944
CIFG16B1Mp24	*Star Wars 4*	33.749	34.434	0.555	0.076	28.519	33.791	34.434	0.505	0.074	14.821
CIFG16B1Mp28	*Star Wars 4*	33.336	34.147	0.587	0.087	34.433	33.383	34.147	0.530	0.085	20.197
CIFG16B1Mp01	*Tokyo Olympics*	50.525	50.582	0.109	0.020	45.387	50.527	50.582	0.106	0.019	31.138
CIFG16B1Mp02	*Tokyo Olympics*	44.981	45.275	0.304	0.043	53.945	45.016	45.275	0.278	0.040	38.310
CIFG16B1Mp04	*Tokyo Olympics*	41.018	41.637	0.515	0.063	71.099	41.058	41.637	0.476	0.061	44.496
CIFG16B1Mp08	*Tokyo Olympics*	37.117	38.082	0.676	0.083	72.767	37.157	38.082	0.656	0.081	50.393
CIFG16B1Mp12	*Tokyo Olympics*	34.950	36.042	0.749	0.088	31.513	34.989	36.042	0.734	0.087	23.968
CIFG16B1Mp16	*Tokyo Olympics*	33.595	34.835	0.808	0.098	32.159	33.635	34.835	0.795	0.096	25.729
CIFG16B1Mp20	*Tokyo Olympics*	32.525	33.771	0.829	0.099	24.112	32.564	33.771	0.818	0.097	20.007
CIFG16B1Mp24	*Tokyo Olympics*	31.888	33.339	0.881	0.115	73.098	31.930	33.338	0.871	0.112	57.422
CIFG16B1Mp28	*Tokyo Olympics*	31.255	32.684	0.895	0.111	32.275	31.298	32.684	0.886	0.109	28.600
CIFG16B1Mp01	*NBC 12 News*	49.154	49.156	0.025	0.002	1.445	49.155	49.156	0.015	0.001	0.572
CIFG16B1Mp02	*NBC 12 News*	43.057	43.126	0.168	0.018	5.773	43.087	43.126	0.129	0.014	3.592
CIFG16B1Mp04	*NBC 12 News*	39.053	39.222	0.272	0.032	14.741	39.082	39.222	0.249	0.029	6.539
CIFG16B1Mp08	*NBC 12 News*	35.196	35.483	0.355	0.046	17.542	35.228	35.483	0.336	0.043	10.666
CIFG16B1Mp12	*NBC 12 News*	32.992	33.341	0.395	0.054	22.801	33.027	33.341	0.374	0.051	13.321
CIFG16B1Mp16	*NBC 12 News*	31.501	31.894	0.417	0.061	22.875	31.537	31.894	0.399	0.057	14.891
CIFG16B1Mp20	*NBC 12 News*	30.399	30.824	0.433	0.066	23.005	30.435	30.824	0.418	0.062	16.097
CIFG16B1Mp24	*NBC 12 News*	29.558	30.008	0.446	0.070	21.778	29.595	30.008	0.432	0.066	16.977
CIFG16B1Mp28	*NBC 12 News*	28.872	29.340	0.455	0.073	21.073	28.910	29.340	0.442	0.069	17.754

TABLE LXXXVIII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B3Mp01	*Sony Demo*	49.988	50.490	0.272	0.057	20.804	49.993	50.489	0.270	0.056	15.342
CIFG16B3Mp02	*Sony Demo*	43.998	44.772	0.377	0.079	25.128	44.031	44.771	0.359	0.078	18.081
CIFG16B3Mp04	*Sony Demo*	39.035	39.930	0.436	0.094	31.015	39.063	39.929	0.423	0.092	19.986
CIFG16B3Mp08	*Sony Demo*	34.525	35.408	0.487	0.099	36.142	34.546	35.406	0.479	0.097	21.873
CIFG16B3Mp12	*Sony Demo*	32.190	33.120	0.523	0.107	30.706	32.209	33.119	0.517	0.105	24.604
CIFG16B3Mp16	*Sony Demo*	30.698	31.684	0.553	0.114	32.391	30.716	31.683	0.549	0.112	25.813
CIFG16B3Mp20	*Sony Demo*	29.626	30.550	0.573	0.107	27.420	29.643	30.549	0.570	0.105	20.258
CIFG16B3Mp24	*Sony Demo*	28.839	29.911	0.599	0.125	42.556	28.857	29.910	0.596	0.122	26.238
CIFG16B3Mp28	*Sony Demo*	28.204	29.293	0.615	0.127	35.326	28.222	29.292	0.613	0.124	27.862
CIFG16B3Mp01	*Silence o/t L.*	50.373	50.455	0.152	0.024	49.217	50.378	50.455	0.149	0.021	28.040
CIFG16B3Mp02	*Silence o/t L.*	46.378	46.818	0.460	0.045	59.089	46.405	46.818	0.443	0.043	33.414
CIFG16B3Mp04	*Silence o/t L.*	42.616	43.424	0.674	0.065	68.544	42.655	43.424	0.645	0.062	39.069
CIFG16B3Mp08	*Silence o/t L.*	38.930	40.046	0.828	0.082	70.531	38.971	40.046	0.812	0.079	44.015
CIFG16B3Mp12	*Silence o/t L.*	36.936	38.167	0.918	0.083	22.074	36.978	38.167	0.906	0.081	19.129

TABLE LXXXVIII: *continued*

CIFG16B3Mp16	*Silence o/t L.*	35.704	37.116	1.005	0.092	24.061	35.751	37.116	0.995	0.089	20.702
CIFG16B3Mp20	*Silence o/t L.*	34.792	36.298	1.067	0.095	24.473	34.842	36.298	1.059	0.093	19.915
CIFG16B3Mp24	*Silence o/t L.*	34.135	35.862	1.130	0.111	74.082	34.190	35.862	1.123	0.108	50.337
CIFG16B3Mp28	*Silence o/t L.*	33.549	35.261	1.163	0.104	25.728	33.609	35.261	1.157	0.102	23.723
CIFG16B3Mp01	*Star Wars 4*	51.188	51.320	0.162	0.031	45.317	51.194	51.320	0.159	0.029	28.261
CIFG16B3Mp02	*Star Wars 4*	46.454	47.000	5.936	0.048	78.962	46.691	47.000	0.310	0.044	35.053
CIFG16B3Mp04	*Star Wars 4*	42.165	43.155	9.382	0.065	85.231	42.646	43.155	0.410	0.060	41.233
CIFG16B3Mp08	*Star Wars 4*	38.543	39.541	5.157	0.082	86.306	38.855	39.541	0.470	0.078	45.732
CIFG16B3Mp12	*Star Wars 4*	36.541	37.419	3.761	0.072	43.715	36.778	37.419	0.484	0.070	17.319
CIFG16B3Mp16	*Star Wars 4*	35.325	36.212	2.887	0.078	43.728	35.515	36.212	0.501	0.076	18.422
CIFG16B3Mp20	*Star Wars 4*	34.456	35.458	2.511	0.103	87.134	34.626	35.458	0.515	0.099	49.720
CIFG16B3Mp24	*Star Wars 4*	33.648	34.440	2.147	0.077	38.458	33.791	34.440	0.504	0.074	15.734
CIFG16B3Mp28	*Star Wars 4*	33.229	34.137	1.917	0.089	44.050	33.366	34.137	0.527	0.086	20.296
CIFG16B3Mp01	*Tokyo Olympics*	50.568	50.631	0.116	0.021	45.387	50.569	50.631	0.114	0.020	31.079
CIFG16B3Mp02	*Tokyo Olympics*	45.003	45.305	0.315	0.043	62.695	45.040	45.305	0.281	0.041	38.348
CIFG16B3Mp04	*Tokyo Olympics*	41.042	41.682	0.562	0.064	70.345	41.097	41.682	0.478	0.061	44.523
CIFG16B3Mp08	*Tokyo Olympics*	37.151	38.133	0.690	0.084	72.139	37.206	38.133	0.655	0.081	50.331
CIFG16B3Mp12	*Tokyo Olympics*	34.968	36.064	0.752	0.089	32.292	35.021	36.064	0.727	0.086	23.874
CIFG16B3Mp16	*Tokyo Olympics*	33.594	34.829	0.801	0.098	30.590	33.646	34.829	0.784	0.095	25.632
CIFG16B3Mp20	*Tokyo Olympics*	32.503	33.736	0.818	0.099	24.386	32.551	33.735	0.804	0.097	19.748
CIFG16B3Mp24	*Tokyo Olympics*	31.845	33.277	0.867	0.115	73.343	31.896	33.277	0.854	0.112	57.287
CIFG16B3Mp28	*Tokyo Olympics*	31.193	32.598	0.879	0.111	31.616	31.243	32.598	0.867	0.108	28.530
CIFG16B3Mp01	*NBC 12 News*	49.171	49.172	0.026	0.002	1.612	49.172	49.172	0.017	0.002	0.634
CIFG16B3Mp02	*NBC 12 News*	43.082	43.152	0.170	0.019	5.687	43.112	43.152	0.132	0.014	3.664
CIFG16B3Mp04	*NBC 12 News*	39.062	39.234	0.278	0.032	17.618	39.093	39.234	0.249	0.029	6.574
CIFG16B3Mp08	*NBC 12 News*	35.221	35.515	0.372	0.046	21.529	35.260	35.515	0.336	0.043	10.739
CIFG16B3Mp12	*NBC 12 News*	33.021	33.376	0.409	0.055	24.938	33.063	33.376	0.373	0.051	13.365
CIFG16B3Mp16	*NBC 12 News*	31.526	31.924	0.430	0.061	25.593	31.570	31.924	0.397	0.057	14.869
CIFG16B3Mp20	*NBC 12 News*	30.413	30.841	0.451	0.066	27.111	30.458	30.841	0.415	0.062	16.131
CIFG16B3Mp24	*NBC 12 News*	29.564	30.014	0.453	0.070	24.979	29.608	30.014	0.429	0.065	17.150
CIFG16B3Mp28	*NBC 12 News*	28.867	29.334	0.459	0.073	24.604	28.912	29.334	0.438	0.068	17.911

TABLE LXXXIX: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B7Mp01	*Sony Demo*	50.009	50.517	0.272	0.057	20.805	50.013	50.516	0.272	0.057	15.382
CIFG16B7Mp02	*Sony Demo*	44.031	44.814	0.379	0.080	24.987	44.062	44.813	0.362	0.078	18.192
CIFG16B7Mp04	*Sony Demo*	39.096	40.005	0.437	0.095	30.894	39.121	40.003	0.426	0.093	21.067
CIFG16B7Mp08	*Sony Demo*	34.618	35.498	0.484	0.099	36.036	34.635	35.497	0.478	0.097	22.358
CIFG16B7Mp12	*Sony Demo*	32.291	33.216	0.518	0.107	30.763	32.308	33.215	0.513	0.105	24.744
CIFG16B7Mp16	*Sony Demo*	30.791	31.768	0.547	0.114	32.356	30.809	31.767	0.544	0.112	25.698
CIFG16B7Mp20	*Sony Demo*	29.705	30.621	0.567	0.107	35.347	29.722	30.620	0.563	0.106	21.994
CIFG16B7Mp24	*Sony Demo*	28.899	29.959	0.591	0.125	42.150	28.917	29.957	0.588	0.122	26.433
CIFG16B7Mp28	*Sony Demo*	28.243	29.320	0.607	0.127	35.081	28.262	29.319	0.604	0.124	27.667
CIFG16B7Mp01	*Silence o/t L.*	50.455	50.539	0.161	0.023	49.208	50.458	50.539	0.159	0.021	26.571
CIFG16B7Mp02	*Silence o/t L.*	46.407	46.860	0.472	0.046	61.388	46.435	46.860	0.449	0.044	33.393
CIFG16B7Mp04	*Silence o/t L.*	42.677	43.518	0.706	0.066	69.862	42.724	43.518	0.653	0.063	39.022
CIFG16B7Mp08	*Silence o/t L.*	39.035	40.194	0.840	0.083	70.341	39.081	40.194	0.820	0.080	43.891
CIFG16B7Mp12	*Silence o/t L.*	37.037	38.308	0.926	0.085	21.897	37.084	38.308	0.913	0.082	18.977
CIFG16B7Mp16	*Silence o/t L.*	35.786	37.232	1.009	0.093	22.448	35.837	37.232	0.999	0.091	20.672
CIFG16B7Mp20	*Silence o/t L.*	34.850	36.380	1.068	0.096	21.734	34.904	36.380	1.060	0.094	19.997
CIFG16B7Mp24	*Silence o/t L.*	34.174	35.925	1.130	0.112	73.679	34.231	35.925	1.124	0.109	50.322
CIFG16B7Mp28	*Silence o/t L.*	33.570	35.300	1.162	0.105	25.350	33.631	35.300	1.156	0.103	23.728
CIFG16B7Mp01	*Star Wars 4*	51.235	51.367	0.167	0.031	45.317	51.239	51.367	0.165	0.028	29.002
CIFG16B7Mp02	*Star Wars 4*	46.622	47.039	2.692	0.048	76.370	46.728	47.039	0.312	0.044	36.095
CIFG16B7Mp04	*Star Wars 4*	42.474	43.227	6.338	0.065	84.134	42.712	43.227	0.411	0.061	40.231
CIFG16B7Mp08	*Star Wars 4*	38.755	39.630	3.593	0.083	85.384	38.924	39.630	0.475	0.079	44.893
CIFG16B7Mp12	*Star Wars 4*	36.711	37.496	2.439	0.073	42.499	36.838	37.496	0.488	0.070	16.356
CIFG16B7Mp16	*Star Wars 4*	35.449	36.269	1.856	0.079	42.467	35.555	36.269	0.504	0.077	17.508
CIFG16B7Mp20	*Star Wars 4*	34.550	35.495	1.418	0.104	85.221	34.645	35.495	0.517	0.099	48.785
CIFG16B7Mp24	*Star Wars 4*	33.706	34.449	1.279	0.077	37.398	33.787	34.449	0.504	0.075	15.181
CIFG16B7Mp28	*Star Wars 4*	33.258	34.126	1.185	0.089	42.264	33.340	34.126	0.527	0.087	20.019
CIFG16B7Mp01	*Tokyo Olympics*	50.592	50.659	0.120	0.021	45.387	50.594	50.659	0.118	0.020	31.108
CIFG16B7Mp02	*Tokyo Olympics*	44.998	45.306	0.322	0.044	62.163	45.037	45.306	0.282	0.041	38.703
CIFG16B7Mp04	*Tokyo Olympics*	41.044	41.703	0.560	0.065	67.451	41.111	41.703	0.479	0.062	44.535
CIFG16B7Mp08	*Tokyo Olympics*	37.154	38.168	0.728	0.085	73.708	37.232	38.168	0.655	0.082	50.301
CIFG16B7Mp12	*Tokyo Olympics*	34.975	36.095	0.775	0.090	34.300	35.045	36.095	0.726	0.087	23.889
CIFG16B7Mp16	*Tokyo Olympics*	33.589	34.841	0.813	0.099	34.818	33.655	34.841	0.781	0.096	25.563
CIFG16B7Mp20	*Tokyo Olympics*	32.493	33.741	0.822	0.100	31.463	32.552	33.741	0.801	0.097	19.961

TABLE LXXXIX: *continued*

CIFG16B7Mp24	*Tokyo Olympics*	31.814	33.253	0.866	0.116	75.925	31.872	33.253	0.848	0.113	57.143
CIFG16B7Mp28	*Tokyo Olympics*	31.147	32.557	0.876	0.111	34.665	31.203	32.557	0.861	0.109	28.440
CIFG16B7Mp01	*NBC 12 News*	49.186	49.188	0.027	0.002	1.610	49.187	49.188	0.018	0.002	0.679
CIFG16B7Mp02	*NBC 12 News*	43.087	43.156	0.169	0.019	5.612	43.116	43.156	0.132	0.014	3.700
CIFG16B7Mp04	*NBC 12 News*	39.070	39.244	0.281	0.032	15.636	39.103	39.244	0.249	0.029	6.658
CIFG16B7Mp08	*NBC 12 News*	35.232	35.553	0.606	0.047	28.188	35.296	35.553	0.336	0.043	11.002
CIFG16B7Mp12	*NBC 12 News*	33.035	33.418	0.685	0.055	29.927	33.105	33.418	0.372	0.051	13.640
CIFG16B7Mp16	*NBC 12 News*	31.538	31.958	0.634	0.061	31.368	31.606	31.958	0.395	0.057	15.079
CIFG16B7Mp20	*NBC 12 News*	30.422	30.865	0.626	0.066	32.127	30.486	30.865	0.411	0.061	16.274
CIFG16B7Mp24	*NBC 12 News*	29.564	30.024	0.614	0.069	31.395	29.624	30.024	0.424	0.065	17.223
CIFG16B7Mp28	*NBC 12 News*	28.856	29.329	0.583	0.072	31.034	28.915	29.329	0.433	0.067	17.906

TABLE XC: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B15Mp01	*Sony Demo*	50.009	50.519	0.273	0.057	20.805	50.012	50.518	0.273	0.057	15.433
CIFG16B15Mp02	*Sony Demo*	44.065	44.862	0.381	0.080	26.231	44.093	44.861	0.366	0.079	18.342
CIFG16B15Mp04	*Sony Demo*	39.164	40.087	0.438	0.096	33.095	39.185	40.086	0.429	0.095	21.519
CIFG16B15Mp08	*Sony Demo*	34.718	35.599	0.484	0.099	35.864	34.731	35.598	0.481	0.097	22.639
CIFG16B15Mp12	*Sony Demo*	32.406	33.331	0.516	0.107	30.670	32.418	33.330	0.514	0.105	25.052
CIFG16B15Mp16	*Sony Demo*	30.903	31.872	0.543	0.113	32.278	30.916	31.871	0.542	0.112	26.267
CIFG16B15Mp20	*Sony Demo*	29.798	30.709	0.560	0.108	30.280	29.810	30.708	0.558	0.107	24.048
CIFG16B15Mp24	*Sony Demo*	28.966	30.011	0.583	0.125	42.095	28.980	30.009	0.582	0.122	27.172
CIFG16B15Mp28	*Sony Demo*	28.277	29.337	0.597	0.126	34.999	28.292	29.336	0.596	0.124	28.176
CIFG16B15Mp01	*Silence o/t L.*	50.499	50.586	0.165	0.023	49.208	50.502	50.586	0.164	0.021	26.566
CIFG16B15Mp02	*Silence o/t L.*	46.441	46.892	0.465	0.046	56.320	46.463	46.892	0.451	0.044	33.371
CIFG16B15Mp04	*Silence o/t L.*	42.801	43.635	0.668	0.066	61.930	42.825	43.635	0.656	0.064	38.956
CIFG16B15Mp08	*Silence o/t L.*	39.223	40.409	0.837	0.084	66.730	39.248	40.409	0.829	0.082	43.762
CIFG16B15Mp12	*Silence o/t L.*	37.237	38.548	0.930	0.086	19.930	37.265	38.548	0.924	0.085	18.986
CIFG16B15Mp16	*Silence o/t L.*	35.547	37.063	0.973	0.098	21.624	35.581	37.063	0.964	0.097	20.440
CIFG16B15Mp20	*Silence o/t L.*	34.989	36.531	1.066	0.096	21.621	35.024	36.531	1.061	0.095	20.114
CIFG16B15Mp24	*Silence o/t L.*	34.270	36.021	1.123	0.112	73.035	34.310	36.021	1.119	0.110	50.255
CIFG16B15Mp28	*Silence o/t L.*	33.629	35.350	1.154	0.106	24.742	33.672	35.350	1.150	0.104	23.709
CIFG16B15Mp01	*Star Wars 4*	51.242	51.377	0.170	0.031	45.317	51.246	51.377	0.169	0.028	28.553
CIFG16B15Mp02	*Star Wars 4*	46.733	47.069	0.327	0.047	52.275	46.755	47.069	0.313	0.044	34.959
CIFG16B15Mp04	*Star Wars 4*	42.758	43.308	0.424	0.064	57.365	42.783	43.308	0.411	0.061	39.811
CIFG16B15Mp08	*Star Wars 4*	39.001	39.755	0.490	0.083	62.999	39.028	39.755	0.479	0.080	44.056
CIFG16B15Mp12	*Star Wars 4*	36.915	37.620	0.505	0.073	22.851	36.942	37.620	0.492	0.071	15.912
CIFG16B15Mp16	*Star Wars 4*	35.606	36.369	0.521	0.079	24.936	35.636	36.369	0.508	0.077	17.308
CIFG16B15Mp20	*Star Wars 4*	34.653	35.556	0.533	0.104	67.819	34.686	35.556	0.520	0.100	48.882
CIFG16B15Mp24	*Star Wars 4*	33.753	34.463	0.521	0.078	21.409	33.783	34.463	0.507	0.076	15.292
CIFG16B15Mp28	*Star Wars 4*	33.248	34.089	0.543	0.090	27.313	33.282	34.089	0.529	0.088	20.135
CIFG16B15Mp01	*NBC 12 News*	49.202	49.204	0.027	0.002	1.595	49.203	49.204	0.018	0.002	0.724
CIFG16B15Mp02	*NBC 12 News*	43.087	43.155	0.168	0.018	5.575	43.115	43.155	0.131	0.014	3.709
CIFG16B15Mp04	*NBC 12 News*	39.112	39.280	0.270	0.032	9.913	39.138	39.280	0.250	0.029	6.821
CIFG16B15Mp08	*NBC 12 News*	35.377	35.663	0.354	0.046	14.223	35.401	35.663	0.341	0.044	11.537
CIFG16B15Mp12	*NBC 12 News*	33.200	33.544	0.387	0.054	16.555	33.226	33.544	0.375	0.051	14.140
CIFG16B15Mp16	*NBC 12 News*	31.692	32.074	0.407	0.060	17.838	31.720	32.074	0.396	0.057	15.652
CIFG16B15Mp20	*NBC 12 News*	30.549	30.957	0.422	0.064	19.062	30.578	30.957	0.411	0.061	16.817
CIFG16B15Mp24	*NBC 12 News*	29.660	30.091	0.434	0.068	19.603	29.691	30.091	0.423	0.065	17.624
CIFG16B15Mp28	*NBC 12 News*	28.917	29.363	0.442	0.071	18.779	28.950	29.363	0.431	0.067	17.950

TABLE XCI: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG12B2Mp01	*Sony Demo*	49.994	50.493	0.272	0.057	20.802	49.997	50.490	0.270	0.056	15.531
CIFG12B2Mp02	*Sony Demo*	44.085	44.858	0.380	0.079	25.083	44.123	44.855	0.357	0.077	18.243
CIFG12B2Mp04	*Sony Demo*	39.134	40.026	0.437	0.094	30.962	39.165	40.022	0.420	0.092	20.758
CIFG12B2Mp08	*Sony Demo*	34.607	35.487	0.489	0.098	36.111	34.629	35.482	0.478	0.096	23.103
CIFG12B2Mp12	*Sony Demo*	32.255	33.188	0.526	0.106	31.142	32.275	33.185	0.518	0.105	24.122
CIFG12B2Mp16	*Sony Demo*	30.750	31.744	0.558	0.114	32.982	30.768	31.740	0.552	0.112	25.194
CIFG12B2Mp20	*Sony Demo*	29.670	30.609	0.580	0.108	38.304	29.687	30.607	0.575	0.106	21.917
CIFG12B2Mp24	*Sony Demo*	28.878	29.969	0.607	0.126	42.949	28.896	29.963	0.602	0.122	27.442
CIFG12B2Mp28	*Sony Demo*	28.238	29.348	0.624	0.127	35.865	28.257	29.344	0.620	0.124	26.766
CIFG12B2Mp01	*Silence o/t L.*	50.373	50.456	0.153	0.025	49.238	50.377	50.456	0.149	0.023	38.560
CIFG12B2Mp02	*Silence o/t L.*	46.427	46.862	0.459	0.045	56.405	46.456	46.863	0.438	0.043	33.394

TABLE XCI: *continued*

CIFG12B2Mp04	*Silence o/t L.*	42.664	43.459	0.658	0.064	62.154	42.698	43.460	0.641	0.062	39.104
CIFG12B2Mp08	*Silence o/t L.*	38.956	40.055	0.819	0.081	68.697	38.991	40.055	0.807	0.079	44.107
CIFG12B2Mp12	*Silence o/t L.*	36.950	38.159	0.909	0.082	20.328	36.987	38.159	0.900	0.081	19.142
CIFG12B2Mp16	*Silence o/t L.*	35.711	37.099	0.996	0.091	21.885	35.752	37.099	0.989	0.089	20.767
CIFG12B2Mp20	*Silence o/t L.*	34.795	36.275	1.058	0.094	22.016	34.839	36.275	1.053	0.092	19.932
CIFG12B2Mp24	*Silence o/t L.*	34.134	35.834	1.121	0.111	73.524	34.183	35.835	1.117	0.108	50.396
CIFG12B2Mp28	*Silence o/t L.*	33.545	35.228	1.153	0.104	24.530	33.599	35.228	1.150	0.101	23.737

TABLE XCII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B3MpRC1	*Sony Demo*	29.109	35.900	1.015	0.315	46.968	29.181	35.896	1.025	0.312	40.890
CIFG16B3MpRC2	*Sony Demo*	28.336	32.569	0.805	0.302	46.858	28.360	32.566	0.804	0.301	40.998
CIFG16B3MpRC3	*Sony Demo*	28.671	30.847	0.705	0.230	45.743	28.697	30.843	0.701	0.228	40.743
CIFG16B3MpRC1	*Silence o/t L.*	38.122	42.970	2.862	0.134	76.241	38.239	42.970	2.889	0.131	75.971
CIFG16B3MpRC2	*Silence o/t L.*	35.127	39.308	1.608	0.163	76.593	35.227	39.308	1.596	0.161	75.821
CIFG16B3MpRC3	*Silence o/t L.*	33.752	36.631	1.351	0.154	76.593	33.822	36.631	1.346	0.152	76.004
CIFG16B3MpRC1	*Star Wars 4*	39.138	42.070	3.467	0.145	88.561	39.554	42.070	1.427	0.139	71.855
CIFG16B3MpRC2	*Star Wars 4*	35.738	38.429	2.700	0.151	90.423	36.034	38.429	1.017	0.147	72.112
CIFG16B3MpRC3	*Star Wars 4*	33.179	34.650	1.823	0.141	92.072	33.322	34.650	0.615	0.138	72.112
CIFG16B3MpRC1	*Tokyo Olymp.*	37.511	40.793	1.769	0.128	76.050	37.800	40.793	1.712	0.122	46.863
CIFG16B3MpRC2	*Tokyo Olymp.*	35.240	38.234	1.420	0.140	77.507	35.421	38.234	1.376	0.135	60.075
CIFG16B3MpRC3	*Tokyo Olymp.*	31.509	33.910	1.058	0.160	78.472	31.573	33.910	1.048	0.158	65.833
CIFG16B3MpRC1	*NBC 12 News*	37.105	38.022	0.805	0.071	24.637	37.334	38.022	0.640	0.062	14.898
CIFG16B3MpRC2	*NBC 12 News*	33.750	34.964	0.869	0.091	25.288	33.962	34.964	0.761	0.083	17.445
CIFG16B3MpRC3	*NBC 12 News*	29.488	30.320	0.577	0.096	29.502	29.566	30.320	0.538	0.091	17.244

C. H.264 SVC

TABLE XCIII: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B1SV10	*Sony Demo*	50.884	51.958	0.484	0.080	52.598	51.187	51.957	0.292	0.074	19.206
CIFG16B1SV16	*Sony Demo*	46.407	47.273	0.458	0.076	24.577	46.591	47.273	0.326	0.072	17.794
CIFG16B1SV22	*Sony Demo*	42.050	42.963	0.436	0.089	28.654	42.127	42.961	0.381	0.087	19.819
CIFG16B1SV24	*Sony Demo*	40.544	41.470	0.433	0.093	29.343	40.595	41.469	0.399	0.092	20.119
CIFG16B1SV28	*Sony Demo*	37.537	38.492	0.450	0.101	30.968	37.564	38.491	0.437	0.100	21.355
CIFG16B1SV34	*Sony Demo*	33.238	34.202	0.498	0.109	37.305	33.255	34.200	0.493	0.107	23.186
CIFG16B1SV38	*Sony Demo*	30.631	31.630	0.527	0.118	31.354	30.646	31.629	0.523	0.116	25.444
CIFG16B1SV42	*Sony Demo*	28.106	29.132	0.552	0.129	42.505	28.121	29.130	0.550	0.126	26.259
CIFG16B1SV48	*Sony Demo*	24.861	25.681	0.562	0.114	16.054	24.875	25.680	0.560	0.113	15.290
CIFG16B1SV10	*Silence o/t L.*	52.004	52.358	0.371	0.053	52.237	52.206	52.358	0.138	0.046	49.103
CIFG16B1SV16	*Silence o/t L.*	48.325	48.704	0.390	0.061	57.469	48.408	48.705	0.291	0.057	54.492
CIFG16B1SV22	*Silence o/t L.*	44.965	45.593	0.542	0.075	62.380	45.009	45.593	0.496	0.073	59.847
CIFG16B1SV24	*Silence o/t L.*	43.748	44.470	0.591	0.081	63.772	43.785	44.471	0.557	0.079	61.569
CIFG16B1SV28	*Silence o/t L.*	41.274	42.182	0.683	0.092	66.286	41.304	42.183	0.664	0.090	64.907
CIFG16B1SV34	*Silence o/t L.*	37.574	38.685	0.788	0.109	70.478	37.601	38.685	0.777	0.107	69.566
CIFG16B1SV38	*Silence o/t L.*	35.156	36.207	0.833	0.082	26.068	35.184	36.208	0.823	0.081	20.541
CIFG16B1SV42	*Silence o/t L.*	32.709	33.983	0.871	0.134	75.817	32.740	33.983	0.863	0.131	75.274
CIFG16B1SV48	*Silence o/t L.*	29.336	30.483	0.890	0.101	23.139	29.379	30.484	0.882	0.099	19.083
CIFG16B1SV10	*Star Wars 4*	52.395	52.862	0.333	0.069	50.841	52.564	52.862	0.170	0.063	48.799
CIFG16B1SV16	*Star Wars 4*	48.755	49.224	0.321	0.078	55.924	48.821	49.224	0.262	0.075	53.866
CIFG16B1SV22	*Star Wars 4*	45.064	45.663	0.386	0.092	59.868	45.102	45.663	0.361	0.090	58.539
CIFG16B1SV24	*Star Wars 4*	43.801	44.437	0.407	0.096	61.251	43.835	44.437	0.387	0.093	60.025
CIFG16B1SV28	*Star Wars 4*	41.315	42.038	0.443	0.106	63.737	41.343	42.038	0.429	0.104	62.791
CIFG16B1SV34	*Star Wars 4*	37.680	38.523	0.467	0.128	67.443	37.708	38.522	0.455	0.125	66.641
CIFG16B1SV38	*Star Wars 4*	35.324	35.954	0.471	0.073	21.331	35.352	35.954	0.459	0.071	17.305
CIFG16B1SV42	*Star Wars 4*	32.819	33.414	0.463	0.075	17.103	32.846	33.414	0.451	0.073	14.727
CIFG16B1SV48	*Star Wars 4*	29.422	30.037	0.478	0.084	17.496	29.452	30.037	0.464	0.082	15.876
CIFG16B1SV10	*Tokyo olympics*	52.253	52.769	0.521	0.041	51.514	52.709	52.769	0.118	0.020	37.328
CIFG16B1SV16	*Tokyo olympics*	47.440	47.896	0.475	0.045	57.053	47.749	47.896	0.197	0.031	42.011
CIFG16B1SV22	*Tokyo olympics*	43.578	44.051	0.455	0.053	62.474	43.703	44.051	0.336	0.048	47.107
CIFG16B1SV24	*Tokyo olympics*	42.407	42.947	0.483	0.058	64.361	42.502	42.947	0.397	0.054	48.780
CIFG16B1SV28	*Tokyo olympics*	40.020	40.732	0.552	0.069	67.194	40.080	40.731	0.511	0.066	51.919
CIFG16B1SV34	*Tokyo olympics*	36.207	37.157	0.665	0.086	71.112	36.248	37.157	0.648	0.084	56.583
CIFG16B1SV38	*Tokyo olympics*	33.668	34.687	0.714	0.090	27.935	33.706	34.687	0.701	0.088	24.552
CIFG16B1SV42	*Tokyo olympics*	31.052	32.158	0.750	0.107	76.589	31.088	32.157	0.740	0.105	61.776
CIFG16B1SV48	*Tokyo olympics*	27.323	28.286	0.729	0.104	21.721	27.358	28.286	0.719	0.102	20.439
CIFG16B1SV10	*NBC 12 News*	49.866	50.431	0.485	0.045	6.736	50.420	50.431	0.069	0.006	1.790
CIFG16B1SV16	*NBC 12 News*	44.864	45.295	0.435	0.043	7.830	45.276	45.295	0.093	0.009	2.552
CIFG16B1SV22	*NBC 12 News*	40.906	41.169	0.362	0.036	10.312	41.085	41.169	0.191	0.021	5.195
CIFG16B1SV24	*NBC 12 News*	39.747	39.996	0.352	0.037	11.662	39.870	39.996	0.236	0.027	6.223
CIFG16B1SV28	*NBC 12 News*	37.451	37.736	0.369	0.042	14.408	37.520	37.736	0.312	0.037	8.613
CIFG16B1SV34	*NBC 12 News*	33.908	34.268	0.403	0.053	17.046	33.950	34.268	0.380	0.050	12.339
CIFG16B1SV38	*NBC 12 News*	31.487	31.881	0.417	0.061	19.003	31.525	31.881	0.401	0.057	15.068
CIFG16B1SV42	*NBC 12 News*	28.900	29.313	0.423	0.069	21.009	28.937	29.312	0.409	0.064	17.552
CIFG16B1SV48	*NBC 12 News*	25.260	25.661	0.413	0.078	22.307	25.298	25.661	0.400	0.073	21.226

TABLE XCIV: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B3SV10	*Sony Demo*	50.717	52.085	0.512	0.092	52.628	51.172	52.084	0.317	0.083	22.363
CIFG16B3SV16	*Sony Demo*	46.405	47.519	0.520	0.086	27.588	46.722	47.518	0.359	0.078	20.079
CIFG16B3SV22	*Sony Demo*	42.382	43.500	0.515	0.096	27.959	42.564	43.499	0.409	0.092	21.034
CIFG16B3SV24	*Sony Demo*	41.079	42.159	0.494	0.098	28.985	41.209	42.158	0.415	0.095	21.394
CIFG16B3SV28	*Sony Demo*	38.490	39.527	0.470	0.104	31.442	38.565	39.526	0.427	0.101	22.120
CIFG16B3SV34	*Sony Demo*	34.363	35.370	0.472	0.113	30.451	34.396	35.369	0.459	0.110	24.093
CIFG16B3SV38	*Sony Demo*	31.645	32.625	0.500	0.116	39.095	31.669	32.623	0.493	0.114	24.645
CIFG16B3SV42	*Sony Demo*	29.192	30.191	0.526	0.125	41.392	29.212	30.189	0.521	0.122	25.381
CIFG16B3SV48	*Sony Demo*	25.812	26.845	0.559	0.142	45.026	25.829	26.843	0.557	0.138	28.728
CIFG16B3SV10	*Silence o/t L.*	51.831	52.458	0.462	0.062	52.227	52.280	52.459	0.178	0.047	49.794
CIFG16B3SV16	*Silence o/t L.*	48.471	48.981	0.477	0.063	57.470	48.662	48.981	0.318	0.057	55.031
CIFG16B3SV22	*Silence o/t L.*	45.439	46.133	0.611	0.075	62.353	45.539	46.134	0.514	0.072	60.144
CIFG16B3SV24	*Silence o/t L.*	44.374	45.141	0.647	0.079	63.704	44.455	45.142	0.570	0.077	61.694
CIFG16B3SV28	*Silence o/t L.*	42.174	43.088	0.716	0.088	66.359	42.235	43.088	0.664	0.085	64.415

TABLE XCIV: *continued*

CIFG16B3SV34	*Silence o/t L.*	38.506	39.534	0.786	0.084	44.544	38.551	39.535	0.756	0.083	42.740
CIFG16B3SV38	*Silence o/t L.*	36.017	37.205	0.830	0.117	73.036	36.056	37.205	0.809	0.114	71.413
CIFG16B3SV42	*Silence o/t L.*	33.666	34.933	0.864	0.129	75.750	33.706	34.933	0.847	0.126	74.009
CIFG16B3SV48	*Silence o/t L.*	30.258	31.637	0.899	0.150	78.915	30.307	31.638	0.887	0.147	77.647
CIFG16B3SV10	*Star Wars 4*	52.444	53.109	0.404	0.074	50.854	52.804	53.109	0.179	0.063	48.741
CIFG16B3SV16	*Star Wars 4*	49.114	49.654	0.364	0.079	55.570	49.252	49.654	0.256	0.074	53.302
CIFG16B3SV22	*Star Wars 4*	45.665	46.273	0.393	0.090	59.976	45.729	46.273	0.347	0.087	57.830
CIFG16B3SV24	*Star Wars 4*	44.541	45.189	0.411	0.095	61.174	44.597	45.188	0.372	0.092	58.921
CIFG16B3SV28	*Star Wars 4*	42.271	42.995	0.447	0.102	63.420	42.320	42.995	0.415	0.099	61.502
CIFG16B3SV34	*Star Wars 4*	38.594	39.424	0.474	0.120	67.367	38.633	39.424	0.452	0.117	65.480
CIFG16B3SV38	*Star Wars 4*	36.162	36.801	0.479	0.072	27.912	36.198	36.801	0.460	0.070	18.764
CIFG16B3SV42	*Star Wars 4*	33.788	34.381	0.471	0.072	16.928	33.823	34.380	0.452	0.070	14.102
CIFG16B3SV48	*Star Wars 4*	30.408	31.102	0.490	0.089	20.182	30.445	31.102	0.472	0.087	16.944
CIFG16B3SV10	*Tokyo olympics*	51.629	52.438	0.519	0.056	51.558	52.359	52.438	0.147	0.021	37.699
CIFG16B3SV16	*Tokyo olympics*	46.977	47.683	0.509	0.058	57.073	47.516	47.683	0.215	0.032	42.490
CIFG16B3SV22	*Tokyo olympics*	43.472	44.104	0.526	0.059	62.514	43.733	44.104	0.350	0.049	47.531
CIFG16B3SV24	*Tokyo olympics*	42.458	43.118	0.549	0.062	64.393	42.658	43.118	0.407	0.055	49.174
CIFG16B3SV28	*Tokyo olympics*	40.386	41.166	0.602	0.071	67.517	40.529	41.166	0.504	0.066	52.050
CIFG16B3SV34	*Tokyo olympics*	36.892	37.818	0.646	0.082	44.843	36.976	37.818	0.604	0.079	42.463
CIFG16B3SV38	*Tokyo olympics*	34.383	35.398	0.686	0.093	73.629	34.447	35.398	0.660	0.090	58.009
CIFG16B3SV42	*Tokyo olympics*	31.932	33.011	0.720	0.104	76.336	31.989	33.011	0.701	0.101	60.537
CIFG16B3SV48	*Tokyo olympics*	28.242	29.325	0.735	0.118	80.264	28.293	29.325	0.722	0.115	62.971
CIFG16B3SV10	*NBC 12 News*	49.447	50.136	0.442	0.055	8.585	50.117	50.136	0.090	0.008	2.320
CIFG16B3SV16	*NBC 12 News*	44.494	45.044	0.413	0.054	8.610	45.022	45.044	0.100	0.010	2.728
CIFG16B3SV22	*NBC 12 News*	40.729	41.107	0.394	0.046	10.479	41.015	41.107	0.202	0.022	5.545
CIFG16B3SV24	*NBC 12 News*	39.745	40.082	0.391	0.043	11.591	39.951	40.082	0.243	0.027	6.608
CIFG16B3SV28	*NBC 12 News*	37.772	38.118	0.411	0.046	14.162	37.902	38.118	0.316	0.036	8.709
CIFG16B3SV34	*NBC 12 News*	34.616	35.000	0.428	0.053	17.642	34.690	35.000	0.378	0.048	12.196
CIFG16B3SV38	*NBC 12 News*	32.266	32.665	0.426	0.059	19.123	32.322	32.665	0.393	0.055	13.868
CIFG16B3SV42	*NBC 12 News*	29.897	30.309	0.426	0.066	20.509	29.947	30.309	0.401	0.061	16.375
CIFG16B3SV48	*NBC 12 News*	26.266	26.668	0.414	0.075	21.221	26.311	26.668	0.395	0.069	18.437

TABLE XCV: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B7SV10	*Sony Demo*	50.523	51.888	0.476	0.096	52.639	50.914	51.886	0.324	0.087	23.366
CIFG16B7SV16	*Sony Demo*	46.262	47.469	0.514	0.093	57.814	46.546	47.468	0.388	0.085	22.889
CIFG16B7SV22	*Sony Demo*	42.263	43.494	0.543	0.101	28.100	42.451	43.493	0.449	0.096	21.862
CIFG16B7SV24	*Sony Demo*	41.052	42.274	0.537	0.104	29.369	41.207	42.273	0.456	0.100	22.578
CIFG16B7SV28	*Sony Demo*	38.567	39.723	0.509	0.109	33.180	38.665	39.722	0.453	0.106	23.299
CIFG16B7SV34	*Sony Demo*	34.765	35.822	0.472	0.116	34.681	34.812	35.820	0.451	0.114	23.800
CIFG16B7SV38	*Sony Demo*	32.254	33.232	0.477	0.117	36.824	32.286	33.230	0.466	0.114	24.584
CIFG16B7SV42	*Sony Demo*	29.736	30.612	0.498	0.111	23.523	29.760	30.612	0.492	0.110	20.929
CIFG16B7SV48	*Sony Demo*	26.288	27.169	0.538	0.120	20.868	26.307	27.168	0.535	0.118	18.287
CIFG16B7SV10	*Silence o/t L.*	51.548	52.119	0.409	0.062	52.244	51.929	52.119	0.194	0.048	50.312
CIFG16B7SV16	*Silence o/t L.*	48.390	48.940	0.486	0.065	57.489	48.582	48.940	0.354	0.058	55.554
CIFG16B7SV22	*Silence o/t L.*	45.496	46.250	0.647	0.076	62.429	45.606	46.251	0.556	0.072	60.565
CIFG16B7SV24	*Silence o/t L.*	44.512	45.335	0.686	0.079	63.741	44.605	45.336	0.607	0.076	61.975
CIFG16B7SV28	*Silence o/t L.*	42.358	43.304	0.742	0.087	66.510	42.429	43.304	0.685	0.085	64.837
CIFG16B7SV34	*Silence o/t L.*	38.889	39.938	0.803	0.084	44.770	38.941	39.938	0.767	0.082	43.134
CIFG16B7SV38	*Silence o/t L.*	36.518	37.712	0.837	0.114	73.261	36.565	37.712	0.808	0.111	71.707
CIFG16B7SV42	*Silence o/t L.*	34.080	35.181	0.864	0.086	24.750	34.124	35.181	0.842	0.084	18.149
CIFG16B7SV48	*Silence o/t L.*	30.694	31.928	0.901	0.102	24.534	30.745	31.928	0.885	0.100	19.868
CIFG16B7SV10	*Star Wars 4*	52.247	52.897	0.374	0.074	50.897	52.571	52.897	0.198	0.064	49.041
CIFG16B7SV16	*Star Wars 4*	49.134	49.704	0.378	0.079	55.585	49.283	49.704	0.275	0.074	53.589
CIFG16B7SV22	*Star Wars 4*	45.883	46.512	0.411	0.089	59.869	45.957	46.512	0.356	0.086	57.664
CIFG16B7SV24	*Star Wars 4*	44.756	45.420	0.423	0.093	61.083	44.819	45.420	0.379	0.090	58.965
CIFG16B7SV28	*Star Wars 4*	42.462	43.194	0.454	0.100	63.691	42.517	43.194	0.418	0.098	61.512
CIFG16B7SV34	*Star Wars 4*	38.926	39.763	0.484	0.117	67.276	38.974	39.763	0.455	0.114	65.354
CIFG16B7SV38	*Star Wars 4*	36.620	37.521	0.493	0.132	69.899	36.665	37.521	0.467	0.128	67.817
CIFG16B7SV42	*Star Wars 4*	34.298	35.265	0.500	0.147	72.781	34.342	35.265	0.476	0.144	70.371
CIFG16B7SV48	*Star Wars 4*	30.693	31.276	0.481	0.076	14.762	30.732	31.276	0.458	0.074	12.382
CIFG16B7SV10	*Tokyo olympics*	51.375	52.054	0.449	0.054	51.542	51.961	52.054	0.165	0.023	36.987
CIFG16B7SV16	*Tokyo olympics*	46.729	47.352	0.452	0.057	57.085	47.164	47.352	0.231	0.034	43.218
CIFG16B7SV22	*Tokyo olympics*	43.265	43.912	0.513	0.061	62.545	43.500	43.912	0.377	0.052	48.182
CIFG16B7SV24	*Tokyo olympics*	42.301	42.997	0.552	0.064	64.396	42.496	42.997	0.433	0.057	48.427
CIFG16B7SV28	*Tokyo olympics*	40.274	41.104	0.626	0.073	67.703	40.419	41.104	0.536	0.067	49.574
CIFG16B7SV34	*Tokyo olympics*	36.996	37.964	0.667	0.084	45.202	37.093	37.964	0.617	0.080	43.112
CIFG16B7SV38	*Tokyo olympics*	34.667	35.703	0.689	0.094	73.953	34.746	35.703	0.654	0.090	55.826

TABLE XCV: *continued*

CIFG16B7SV42	*Tokyo olympics*	32.155	33.173	0.704	0.094	25.288	32.222	33.173	0.679	0.091	19.897
CIFG16B7SV48	*Tokyo olympics*	28.560	29.602	0.723	0.107	24.794	28.620	29.602	0.705	0.103	21.242
CIFG16B7SV10	*NBC 12 News*	49.289	49.845	0.385	0.051	9.486	49.822	49.845	0.098	0.009	2.448
CIFG16B7SV16	*NBC 12 News*	44.329	44.765	0.358	0.049	9.145	44.739	44.764	0.107	0.011	2.881
CIFG16B7SV22	*NBC 12 News*	40.555	40.900	0.364	0.045	10.546	40.798	40.900	0.213	0.023	5.851
CIFG16B7SV24	*NBC 12 News*	39.618	39.954	0.378	0.044	11.311	39.811	39.954	0.255	0.028	6.933
CIFG16B7SV28	*NBC 12 News*	37.759	38.119	0.416	0.047	14.044	37.888	38.119	0.331	0.037	9.010
CIFG16B7SV34	*NBC 12 News*	34.806	35.211	0.445	0.054	16.464	34.888	35.211	0.390	0.048	12.250
CIFG16B7SV38	*NBC 12 News*	32.676	33.095	0.445	0.059	18.401	32.744	33.095	0.401	0.054	14.079
CIFG16B7SV42	*NBC 12 News*	30.321	30.740	0.436	0.065	20.188	30.379	30.740	0.401	0.060	16.354
CIFG16B7SV48	*NBC 12 News*	26.753	27.156	0.418	0.073	22.491	26.802	27.156	0.393	0.068	17.767

TABLE XCVI: Overview of quality statistics of single–layer traces.

		Frame Level					GoP level				
Enc. M.	Video	$\bar{Q}$	$\bar{Q}'$	$CoQV$	$CoQV'$	$Q_{\min}^{\max}$	$\bar{Q}^{(G)}$	$\bar{Q}'^{(G)}$	$CoQC^{(G)}$	$CoQV'^{(G)}$	$Q_{\min}^{\max(G)}$
CIFG16B15SV10	*Sony Demo*	50.631	52.169	0.473	0.104	52.618	51.117	52.168	0.323	0.092	25.196
CIFG16B15SV16	*Sony Demo*	46.372	47.633	0.514	0.096	44.554	46.652	47.632	0.397	0.089	24.462
CIFG16B15SV22	*Sony Demo*	42.439	43.819	0.570	0.106	27.688	42.651	43.818	0.480	0.101	22.871
CIFG16B15SV24	*Sony Demo*	41.179	42.563	0.573	0.110	29.542	41.359	42.561	0.493	0.106	23.052
CIFG16B15SV28	*Sony Demo*	38.868	40.215	0.570	0.116	33.064	39.003	40.214	0.503	0.112	23.808
CIFG16B15SV34	*Sony Demo*	35.358	36.553	0.520	0.121	36.166	35.434	36.551	0.478	0.118	25.133
CIFG16B15SV38	*Sony Demo*	32.952	33.982	0.485	0.118	37.178	33.002	33.981	0.461	0.115	25.415
CIFG16B15SV42	*Sony Demo*	30.600	31.594	0.479	0.124	38.672	30.637	31.592	0.466	0.121	25.895
CIFG16B15SV48	*Sony Demo*	27.113	27.953	0.508	0.115	20.267	27.140	27.952	0.502	0.113	17.823
CIFG16B15SV10	*Silence o/t L.*	51.625	52.279	0.394	0.067	52.246	52.085	52.279	0.198	0.047	49.964
CIFG16B15SV16	*Silence o/t L.*	48.434	48.979	0.469	0.064	57.473	48.624	48.979	0.352	0.057	55.349
CIFG16B15SV22	*Silence o/t L.*	45.714	46.514	0.664	0.076	62.474	45.846	46.514	0.574	0.072	60.419
CIFG16B15SV24	*Silence o/t L.*	44.717	45.587	0.713	0.079	63.842	44.828	45.587	0.632	0.076	61.980
CIFG16B15SV28	*Silence o/t L.*	42.731	43.712	0.776	0.086	66.447	42.820	43.712	0.709	0.084	64.775
CIFG16B15SV34	*Silence o/t L.*	39.453	40.586	0.829	0.101	70.582	39.522	40.586	0.781	0.098	68.845
CIFG16B15SV38	*Silence o/t L.*	37.105	38.306	0.851	0.111	73.320	37.166	38.306	0.812	0.108	71.648
CIFG16B15SV42	*Silence o/t L.*	34.761	36.029	0.874	0.121	75.871	34.821	36.029	0.840	0.118	74.284
CIFG16B15SV48	*Silence o/t L.*	31.335	32.611	0.903	0.102	25.212	31.403	32.612	0.877	0.099	20.219
CIFG16B15SV10	*Star Wars 4*	52.306	53.044	0.367	0.078	50.847	52.715	53.044	0.201	0.063	48.808
CIFG16B15SV16	*Star Wars 4*	49.202	49.795	0.383	0.078	55.572	49.366	49.795	0.284	0.072	53.533
CIFG16B15SV22	*Star Wars 4*	46.197	46.866	0.436	0.087	59.823	46.288	46.866	0.375	0.084	57.591
CIFG16B15SV24	*Star Wars 4*	45.100	45.802	0.450	0.092	61.305	45.184	45.802	0.394	0.089	58.861
CIFG16B15SV28	*Star Wars 4*	42.908	43.663	0.473	0.099	63.720	42.979	43.663	0.426	0.096	61.375
CIFG16B15SV34	*Star Wars 4*	39.430	40.262	0.499	0.111	67.348	39.492	40.262	0.461	0.108	65.310
CIFG16B15SV38	*Star Wars 4*	37.146	38.063	0.516	0.125	69.993	37.206	38.063	0.480	0.123	67.758
CIFG16B15SV42	*Star Wars 4*	34.936	35.800	0.531	0.100	41.050	34.997	35.800	0.495	0.098	38.451
CIFG16B15SV48	*Star Wars 4*	31.527	32.345	0.541	0.095	28.274	31.587	32.345	0.506	0.092	22.920
CIFG16B15SV10	*Tokyo olympics*	51.580	52.346	0.445	0.061	51.573	52.241	52.346	0.181	0.023	33.379
CIFG16B15SV16	*Tokyo olympics*	46.868	47.444	0.432	0.055	57.065	47.259	47.444	0.232	0.033	37.590
CIFG16B15SV22	*Tokyo olympics*	43.343	43.989	0.497	0.062	62.557	43.582	43.989	0.375	0.051	48.029
CIFG16B15SV24	*Tokyo olympics*	42.319	43.024	0.544	0.065	64.443	42.517	43.024	0.437	0.057	46.014
CIFG16B15SV28	*Tokyo olympics*	40.376	41.227	0.635	0.073	67.884	40.534	41.227	0.547	0.067	49.481
CIFG16B15SV34	*Tokyo olympics*	37.241	38.270	0.700	0.086	71.161	37.360	38.270	0.640	0.082	53.496
CIFG16B15SV38	*Tokyo olympics*	34.966	36.050	0.717	0.094	74.007	35.065	36.050	0.670	0.090	57.625
CIFG16B15SV42	*Tokyo olympics*	32.636	33.764	0.732	0.103	77.057	32.727	33.764	0.694	0.099	58.408
CIFG16B15SV48	*Tokyo olympics*	29.042	30.140	0.728	0.109	25.390	29.125	30.140	0.700	0.105	21.551
CIFG16B15SV10	*NBC 12 News*	49.427	50.058	0.391	0.058	13.697	50.034	50.058	0.100	0.009	2.432
CIFG16B15SV16	*NBC 12 News*	44.446	44.863	0.354	0.049	10.690	44.836	44.863	0.108	0.011	2.804
CIFG16B15SV22	*NBC 12 News*	40.628	40.966	0.350	0.046	11.453	40.869	40.966	0.207	0.023	5.707
CIFG16B15SV24	*NBC 12 News*	39.632	39.965	0.367	0.045	12.031	39.826	39.965	0.253	0.028	6.951
CIFG16B15SV28	*NBC 12 News*	37.883	38.259	0.419	0.048	14.037	38.023	38.259	0.336	0.037	9.144
CIFG16B15SV34	*NBC 12 News*	35.172	35.618	0.474	0.056	15.878	35.270	35.618	0.413	0.049	12.255
CIFG16B15SV38	*NBC 12 News*	33.145	33.606	0.479	0.060	17.666	33.228	33.605	0.426	0.055	14.212
CIFG16B15SV42	*NBC 12 News*	30.969	31.426	0.470	0.065	19.987	31.043	31.426	0.423	0.060	16.002
CIFG16B15SV48	*NBC 12 News*	27.501	27.933	0.442	0.073	22.294	27.566	27.933	0.403	0.067	19.210

APPENDIX V
CORRELATION BETWEEN FRAME SIZES – QUALITIES

A. H.264/AVC

TABLE XCVII: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B1F10	*Sony Demo*	-0.095	-0.130	0.773	-0.638
CIFG16B1F16	*Sony Demo*	-0.051	-0.121	0.799	-0.662
CIFG16B1F22	*Sony Demo*	0.005	-0.122	0.765	-0.660
CIFG16B1F24	*Sony Demo*	0.021	-0.119	0.744	-0.657
CIFG16B1F28	*Sony Demo*	0.041	-0.112	0.711	-0.650
CIFG16B1F34	*Sony Demo*	0.071	-0.107	0.701	-0.666
CIFG16B1F38	*Sony Demo*	0.095	-0.111	0.691	-0.662
CIFG16B1F42	*Sony Demo*	0.114	-0.115	0.679	-0.650
CIFG16B1F48	*Sony Demo*	0.114	-0.110	0.611	-0.602
CIFG16B1F10	*Star Wars 4*	-0.193	0.001	0.573	-0.291
CIFG16B1F16	*Star Wars 4*	0.149	-0.114	0.625	-0.331
CIFG16B1F22	*Star Wars 4*	0.191	-0.133	0.614	-0.360
CIFG16B1F24	*Star Wars 4*	0.191	-0.134	0.625	-0.373
CIFG16B1F28	*Star Wars 4*	0.181	-0.130	0.636	-0.386
CIFG16B1F34	*Star Wars 4*	0.171	-0.124	0.694	-0.409
CIFG16B1F38	*Star Wars 4*	0.182	-0.127	0.730	-0.421
CIFG16B1F42	*Star Wars 4*	0.177	-0.123	0.752	-0.429
CIFG16B1F48	*Star Wars 4*	0.170	-0.113	0.769	-0.418
CIFG16B1F10	*Silence of the Lambs*	0.031	-0.041	0.770	-0.296
CIFG16B1F16	*Silence of the Lambs*	0.279	-0.169	0.812	-0.430
CIFG16B1F22	*Silence of the Lambs*	0.311	-0.204	0.777	-0.467
CIFG16B1F24	*Silence of the Lambs*	0.304	-0.207	0.767	-0.483
CIFG16B1F28	*Silence of the Lambs*	0.294	-0.201	0.760	-0.484
CIFG16B1F34	*Silence of the Lambs*	0.282	-0.190	0.780	-0.500
CIFG16B1F38	*Silence of the Lambs*	0.275	-0.194	0.791	-0.541
CIFG16B1F42	*Silence of the Lambs*	0.252	-0.176	0.795	-0.537
CIFG16B1F48	*Silence of the Lambs*	0.210	-0.153	0.773	-0.538
CIFG16B1F10	*Tokyo Olympics*	0.002	-0.031	0.754	-0.513
CIFG16B1F16	*Tokyo Olympics*	0.042	-0.093	0.740	-0.575
CIFG16B1F22	*Tokyo Olympics*	0.216	-0.222	0.777	-0.630
CIFG16B1F24	*Tokyo Olympics*	0.231	-0.237	0.777	-0.646
CIFG16B1F28	*Tokyo Olympics*	0.230	-0.239	0.763	-0.656
CIFG16B1F34	*Tokyo Olympics*	0.204	-0.217	0.749	-0.667
CIFG16B1F38	*Tokyo Olympics*	0.190	-0.206	0.737	-0.687
CIFG16B1F42	*Tokyo Olympics*	0.158	-0.177	0.716	-0.674
CIFG16B1F48	*Tokyo Olympics*	0.117	-0.137	0.648	-0.631
CIFG16B1F10	*NBC 12 News*	-0.648	0.661	0.800	-0.797
CIFG16B1F16	*NBC 12 News*	-0.534	0.551	0.711	-0.698
CIFG16B1F22	*NBC 12 News*	-0.143	0.149	0.729	-0.703
CIFG16B1F24	*NBC 12 News*	-0.057	0.054	0.713	-0.685
CIFG16B1F28	*NBC 12 News*	0.009	-0.026	0.690	-0.666
CIFG16B1F34	*NBC 12 News*	0.054	-0.074	0.657	-0.642
CIFG16B1F38	*NBC 12 News*	0.072	-0.089	0.623	-0.619
CIFG16B1F42	*NBC 12 News*	0.061	-0.075	0.593	-0.592
CIFG16B1F48	*NBC 12 News*	0.041	-0.047	0.549	-0.533

TABLE XCVIII: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B3F10	*Sony Demo*	-0.034	-0.141	0.780	-0.632
CIFG16B3F16	*Sony Demo*	-0.015	-0.123	0.784	-0.652
CIFG16B3F22	*Sony Demo*	-0.033	-0.091	0.738	-0.650
CIFG16B3F24	*Sony Demo*	-0.032	-0.083	0.721	-0.650
CIFG16B3F28	*Sony Demo*	-0.017	-0.076	0.711	-0.654
CIFG16B3F34	*Sony Demo*	0.019	-0.074	0.738	-0.684
CIFG16B3F38	*Sony Demo*	0.050	-0.081	0.748	-0.689
CIFG16B3F42	*Sony Demo*	0.068	-0.087	0.762	-0.695
CIFG16B3F48	*Sony Demo*	0.075	-0.083	0.726	-0.668
CIFG16B3F10	*Silence of the Lambs*	0.047	-0.031	0.778	-0.318

TABLE XCVIII: *continued*

CIFG16B3F16	*Silence of the Lambs*	0.270	-0.160	0.813	-0.443
CIFG16B3F22	*Silence of the Lambs*	0.290	-0.191	0.784	-0.474
CIFG16B3F24	*Silence of the Lambs*	0.284	-0.192	0.777	-0.487
CIFG16B3F28	*Silence of the Lambs*	0.275	-0.185	0.786	-0.493
CIFG16B3F34	*Silence of the Lambs*	0.258	-0.171	0.827	-0.519
CIFG16B3F38	*Silence of the Lambs*	0.245	-0.172	0.845	-0.568
CIFG16B3F42	*Silence of the Lambs*	0.213	-0.151	0.862	-0.576
CIFG16B3F48	*Silence of the Lambs*	0.155	-0.123	0.875	-0.602
CIFG16B3F10	*Star Wars 4*	-0.191	0.019	0.578	-0.293
CIFG16B3F16	*Star Wars 4*	0.148	-0.111	0.688	-0.357
CIFG16B3F22	*Star Wars 4*	0.193	-0.130	0.690	-0.386
CIFG16B3F24	*Star Wars 4*	0.190	-0.130	0.702	-0.398
CIFG16B3F28	*Star Wars 4*	0.170	-0.122	0.709	-0.414
CIFG16B3F34	*Star Wars 4*	0.145	-0.111	0.760	-0.438
CIFG16B3F38	*Star Wars 4*	0.149	-0.113	0.790	-0.450
CIFG16B3F42	*Star Wars 4*	0.137	-0.107	0.826	-0.467
CIFG16B3F48	*Star Wars 4*	0.113	-0.093	0.862	-0.472
CIFG16B3F10	*Tokyo Olympics*	0.011	-0.024	0.744	-0.525
CIFG16B3F16	*Tokyo Olympics*	0.039	-0.066	0.696	-0.544
CIFG16B3F22	*Tokyo Olympics*	0.201	-0.200	0.763	-0.623
CIFG16B3F24	*Tokyo Olympics*	0.210	-0.213	0.766	-0.638
CIFG16B3F28	*Tokyo Olympics*	0.197	-0.209	0.769	-0.659
CIFG16B3F34	*Tokyo Olympics*	0.164	-0.180	0.780	-0.686
CIFG16B3F38	*Tokyo Olympics*	0.145	-0.164	0.777	-0.710
CIFG16B3F42	*Tokyo Olympics*	0.109	-0.130	0.768	-0.704
CIFG16B3F48	*Tokyo Olympics*	0.052	-0.078	0.746	-0.692
CIFG16B3F10	*NBC 12 News*	-0.607	0.630	0.786	-0.782
CIFG16B3F16	*NBC 12 News*	-0.475	0.523	0.655	-0.642
CIFG16B3F22	*NBC 12 News*	-0.127	0.168	0.699	-0.673
CIFG16B3F24	*NBC 12 News*	-0.051	0.079	0.706	-0.679
CIFG16B3F28	*NBC 12 News*	0.001	0.003	0.712	-0.688
CIFG16B3F34	*NBC 12 News*	0.029	-0.042	0.713	-0.696
CIFG16B3F38	*NBC 12 News*	0.049	-0.061	0.707	-0.691
CIFG16B3F42	*NBC 12 News*	0.039	-0.048	0.713	-0.694
CIFG16B3F48	*NBC 12 News*	0.015	-0.016	0.718	-0.663

TABLE XCIX: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B7F10	*Sony Demo*	0.052	-0.177	0.772	-0.622
CIFG16B7F16	*Sony Demo*	0.073	-0.165	0.775	-0.645
CIFG16B7F22	*Sony Demo*	0.017	-0.115	0.713	-0.631
CIFG16B7F24	*Sony Demo*	-0.001	-0.098	0.686	-0.628
CIFG16B7F28	*Sony Demo*	-0.023	-0.074	0.645	-0.626
CIFG16B7F34	*Sony Demo*	-0.002	-0.064	0.695	-0.659
CIFG16B7F38	*Sony Demo*	0.025	-0.070	0.741	-0.682
CIFG16B7F42	*Sony Demo*	0.038	-0.070	0.773	-0.692
CIFG16B7F48	*Sony Demo*	0.045	-0.070	0.774	-0.684
CIFG16B7F10	*Silence of the Lambs*	0.126	-0.056	0.765	-0.323
CIFG16B7F16	*Silence of the Lambs*	0.327	-0.185	0.812	-0.453
CIFG16B7F22	*Silence of the Lambs*	0.330	-0.209	0.789	-0.482
CIFG16B7F24	*Silence of the Lambs*	0.319	-0.206	0.784	-0.490
CIFG16B7F28	*Silence of the Lambs*	0.302	-0.194	0.793	-0.495
CIFG16B7F34	*Silence of the Lambs*	0.275	-0.172	0.841	-0.519
CIFG16B7F38	*Silence of the Lambs*	0.257	-0.169	0.863	-0.568
CIFG16B7F42	*Silence of the Lambs*	0.216	-0.145	0.881	-0.579
CIFG16B7F48	*Silence of the Lambs*	0.135	-0.105	0.898	-0.613
CIFG16B7F10	*Star Wars 4*	-0.130	0.005	0.556	-0.290
CIFG16B7F16	*Star Wars 4*	0.195	-0.130	0.720	-0.376
CIFG16B7F22	*Star Wars 4*	0.232	-0.146	0.739	-0.404
CIFG16B7F24	*Star Wars 4*	0.227	-0.144	0.745	-0.414
CIFG16B7F28	*Star Wars 4*	0.196	-0.131	0.743	-0.423
CIFG16B7F34	*Star Wars 4*	0.164	-0.117	0.790	-0.450
CIFG16B7F38	*Star Wars 4*	0.163	-0.117	0.817	-0.461
CIFG16B7F42	*Star Wars 4*	0.147	-0.108	0.848	-0.481
CIFG16B7F48	*Star Wars 4*	0.101	-0.086	0.878	-0.494
CIFG16B7F10	*Tokyo Olympics*	0.098	-0.077	0.743	-0.536
CIFG16B7F16	*Tokyo Olympics*	0.140	-0.123	0.691	-0.546
CIFG16B7F22	*Tokyo Olympics*	0.280	-0.248	0.758	-0.624

TABLE XCIX: *continued*

CIFG16B7F24	*Tokyo Olympics*	0.282	-0.257	0.760	-0.635
CIFG16B7F28	*Tokyo Olympics*	0.255	-0.245	0.766	-0.656
CIFG16B7F34	*Tokyo Olympics*	0.206	-0.206	0.786	-0.688
CIFG16B7F38	*Tokyo Olympics*	0.172	-0.180	0.783	-0.712
CIFG16B7F42	*Tokyo Olympics*	0.119	-0.132	0.777	-0.704
CIFG16B7F48	*Tokyo Olympics*	0.050	-0.066	0.763	-0.685
CIFG16B7F10	*NBC 12 News*	-0.519	0.560	0.776	-0.771
CIFG16B7F16	*NBC 12 News*	-0.364	0.446	0.651	-0.637
CIFG16B7F22	*NBC 12 News*	-0.062	0.131	0.677	-0.651
CIFG16B7F24	*NBC 12 News*	0.000	0.052	0.694	-0.668
CIFG16B7F28	*NBC 12 News*	0.042	-0.016	0.710	-0.688
CIFG16B7F34	*NBC 12 News*	0.047	-0.045	0.710	-0.696
CIFG16B7F38	*NBC 12 News*	0.056	-0.058	0.714	-0.696
CIFG16B7F42	*NBC 12 News*	0.048	-0.045	0.746	-0.718
CIFG16B7F48	*NBC 12 News*	0.015	-0.001	0.771	-0.702

TABLE C: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B15F10	*Sony Demo*	0.150	-0.227	0.765	-0.617
CIFG16B15F16	*Sony Demo*	0.175	-0.222	0.775	-0.642
CIFG16B15F22	*Sony Demo*	0.109	-0.165	0.719	-0.615
CIFG16B15F24	*Sony Demo*	0.083	-0.144	0.697	-0.608
CIFG16B15F28	*Sony Demo*	0.029	-0.101	0.640	-0.600
CIFG16B15F34	*Sony Demo*	-0.010	-0.063	0.603	-0.604
CIFG16B15F38	*Sony Demo*	0.005	-0.061	0.667	-0.633
CIFG16B15F42	*Sony Demo*	0.013	-0.057	0.737	-0.668
CIFG16B15F48	*Sony Demo*	0.032	-0.060	0.771	-0.660
CIFG16B15F10	*Silence of the Lambs*	0.214	-0.091	0.747	-0.319
CIFG16B15F16	*Silence of the Lambs*	0.404	-0.224	0.807	-0.458
CIFG16B15F22	*Silence of the Lambs*	0.407	-0.248	0.803	-0.491
CIFG16B15F24	*Silence of the Lambs*	0.394	-0.241	0.801	-0.493
CIFG16B15F28	*Silence of the Lambs*	0.363	-0.223	0.801	-0.497
CIFG16B15F34	*Silence of the Lambs*	0.321	-0.190	0.837	-0.511
CIFG16B15F38	*Silence of the Lambs*	0.296	-0.182	0.858	-0.553
CIFG16B15F42	*Silence of the Lambs*	0.247	-0.152	0.872	-0.558
CIFG16B15F48	*Silence of the Lambs*	0.149	-0.099	0.856	-0.576
CIFG16B15F10	*Star Wars 4*	-0.030	-0.031	0.548	-0.292
CIFG16B15F16	*Star Wars 4*	0.282	-0.168	0.741	-0.389
CIFG16B15F22	*Star Wars 4*	0.302	-0.175	0.765	-0.408
CIFG16B15F24	*Star Wars 4*	0.291	-0.170	0.765	-0.412
CIFG16B15F28	*Star Wars 4*	0.248	-0.152	0.741	-0.414
CIFG16B15F34	*Star Wars 4*	0.217	-0.137	0.781	-0.440
CIFG16B15F38	*Star Wars 4*	0.215	-0.133	0.807	-0.447
CIFG16B15F42	*Star Wars 4*	0.195	-0.121	0.834	-0.467
CIFG16B15F48	*Star Wars 4*	0.139	-0.090	0.849	-0.484
CIFG16B15F10	*Tokyo Olympics*	0.207	-0.145	0.742	-0.553
CIFG16B15F16	*Tokyo Olympics*	0.262	-0.203	0.699	-0.562
CIFG16B15F22	*Tokyo Olympics*	0.395	-0.331	0.769	-0.641
CIFG16B15F24	*Tokyo Olympics*	0.396	-0.339	0.771	-0.649
CIFG16B15F28	*Tokyo Olympics*	0.369	-0.326	0.775	-0.662
CIFG16B15F34	*Tokyo Olympics*	0.311	-0.278	0.786	-0.686
CIFG16B15F38	*Tokyo Olympics*	0.260	-0.243	0.773	-0.703
CIFG16B15F42	*Tokyo Olympics*	0.185	-0.174	0.761	-0.687
CIFG16B15F48	*Tokyo Olympics*	0.091	-0.084	0.738	-0.644
CIFG16B15F10	*NBC 12 News*	-0.408	0.482	0.760	-0.756
CIFG16B15F16	*NBC 12 News*	-0.239	0.358	0.650	-0.636
CIFG16B15F22	*NBC 12 News*	0.019	0.072	0.655	-0.629
CIFG16B15F24	*NBC 12 News*	0.073	-0.000	0.680	-0.654
CIFG16B15F28	*NBC 12 News*	0.110	-0.063	0.701	-0.680
CIFG16B15F34	*NBC 12 News*	0.091	-0.068	0.692	-0.678
CIFG16B15F38	*NBC 12 News*	0.079	-0.062	0.688	-0.673
CIFG16B15F42	*NBC 12 News*	0.060	-0.037	0.725	-0.698
CIFG16B15F48	*NBC 12 News*	0.027	0.013	0.756	-0.692

TABLE CI: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG12B2F10	*Sony Demo*	-0.071	-0.124	0.779	-0.637
CIFG12B2F16	*Sony Demo*	-0.042	-0.111	0.836	-0.696
CIFG12B2F22	*Sony Demo*	-0.031	-0.097	0.789	-0.690
CIFG12B2F24	*Sony Demo*	-0.020	-0.094	0.772	-0.687
CIFG12B2F28	*Sony Demo*	0.007	-0.094	0.755	-0.685
CIFG12B2F34	*Sony Demo*	0.047	-0.094	0.755	-0.692
CIFG12B2F38	*Sony Demo*	0.074	-0.100	0.758	-0.693
CIFG12B2F42	*Sony Demo*	0.092	-0.104	0.759	-0.691
CIFG12B2F48	*Sony Demo*	0.097	-0.103	0.701	-0.659
CIFG12B2F10	*Silence of the Lambs*	0.012	-0.017	0.806	-0.354
CIFG12B2F16	*Silence of the Lambs*	0.232	-0.157	0.844	-0.514
CIFG12B2F22	*Silence of the Lambs*	0.269	-0.202	0.811	-0.548
CIFG12B2F24	*Silence of the Lambs*	0.265	-0.201	0.805	-0.555
CIFG12B2F28	*Silence of the Lambs*	0.263	-0.198	0.807	-0.564
CIFG12B2F34	*Silence of the Lambs*	0.260	-0.190	0.838	-0.586
CIFG12B2F38	*Silence of the Lambs*	0.255	-0.192	0.850	-0.623
CIFG12B2F42	*Silence of the Lambs*	0.231	-0.180	0.859	-0.644
CIFG12B2F48	*Silence of the Lambs*	0.186	-0.155	0.858	-0.663
720pG12B2FxT10	*Sony Demo*	0.105	-0.264	0.852	-0.743
720pG12B2FxT22	*Sony Demo*	0.064	-0.173	0.736	-0.629
720pG12B2FxT28	*Sony Demo*	0.046	-0.128	0.851	-0.715
720pG12B2FxT34	*Sony Demo*	0.084	-0.118	0.845	-0.778
720pG12B2FxT38	*Sony Demo*	0.115	-0.122	0.834	-0.795
720pG12B2FxT42	*Sony Demo*	0.111	-0.115	0.798	-0.741
720pG12B2FxT48	*Sony Demo*	0.073	-0.079	0.733	-0.748
720pG12B2FxT10	*Terminator 2*	-0.129	0.101	0.706	-0.643
720pG12B2FxT22	*Terminator 2*	0.060	-0.050	0.764	-0.706
720pG12B2FxT28	*Terminator 2*	0.054	-0.051	0.781	-0.750
720pG12B2FxT34	*Terminator 2*	-0.048	0.051	0.778	-0.769
720pG12B2FxT38	*Terminator 2*	-0.081	0.084	0.769	-0.773
720pG12B2FxT42	*Terminator 2*	-0.119	0.125	0.785	-0.784
720pG12B2FxT48	*Terminator 2*	-0.127	0.153	0.872	-0.842

B. MPEG–4 Part 2

TABLE CII: Correlation between quality and traffic for single–layer traces.

Enc. M.	Video	Frame Level ρ_{XM}	Frame Level ρ_{XQ}	GoP level $\rho_{XM}^{(G)}$	GoP level $\rho_{XQ}^{(G)}$
CIFG16B1Mp01	*Sony Demo*	0.569	-0.514	0.732	-0.679
CIFG16B1Mp02	*Sony Demo*	0.323	-0.323	0.771	-0.645
CIFG16B1Mp04	*Sony Demo*	0.256	-0.262	0.722	-0.633
CIFG16B1Mp08	*Sony Demo*	0.202	-0.214	0.639	-0.609
CIFG16B1Mp12	*Sony Demo*	0.167	-0.184	0.539	-0.549
CIFG16B1Mp16	*Sony Demo*	0.140	-0.164	0.419	-0.474
CIFG16B1Mp20	*Sony Demo*	0.115	-0.146	0.290	-0.376
CIFG16B1Mp24	*Sony Demo*	0.098	-0.137	0.187	-0.315
CIFG16B1Mp28	*Sony Demo*	0.083	-0.132	0.102	-0.253
CIFG16B1Mp01	*Silence of the Lambs*	0.542	-0.337	0.728	-0.460
CIFG16B1Mp02	*Silence of the Lambs*	0.497	-0.410	0.802	-0.671
CIFG16B1Mp04	*Silence of the Lambs*	0.436	-0.365	0.756	-0.627
CIFG16B1Mp08	*Silence of the Lambs*	0.369	-0.316	0.660	-0.561
CIFG16B1Mp12	*Silence of the Lambs*	0.318	-0.303	0.555	-0.523
CIFG16B1Mp16	*Silence of the Lambs*	0.285	-0.289	0.466	-0.468
CIFG16B1Mp20	*Silence of the Lambs*	0.263	-0.287	0.397	-0.430
CIFG16B1Mp24	*Silence of the Lambs*	0.250	-0.281	0.349	-0.401
CIFG16B1Mp28	*Silence of the Lambs*	0.243	-0.302	0.317	-0.402
CIFG16B1Mp01	*Star Wars 4*	0.489	-0.334	0.584	-0.452
CIFG16B1Mp02	*Star Wars 4*	0.204	-0.213	0.564	-0.462
CIFG16B1Mp04	*Star Wars 4*	0.141	-0.201	0.505	-0.447
CIFG16B1Mp08	*Star Wars 4*	0.178	-0.185	0.457	-0.408
CIFG16B1Mp12	*Star Wars 4*	0.173	-0.201	0.411	-0.423
CIFG16B1Mp16	*Star Wars 4*	0.192	-0.203	0.372	-0.392
CIFG16B1Mp20	*Star Wars 4*	0.211	-0.187	0.348	-0.334
CIFG16B1Mp24	*Star Wars 4*	0.229	-0.236	0.340	-0.375
CIFG16B1Mp28	*Star Wars 4*	0.251	-0.250	0.339	-0.376
CIFG16B1Mp01	*Tokyo Olympics*	0.341	-0.243	0.521	-0.383
CIFG16B1Mp02	*Tokyo Olympics*	0.414	-0.341	0.734	-0.583
CIFG16B1Mp04	*Tokyo Olympics*	0.433	-0.392	0.784	-0.662
CIFG16B1Mp08	*Tokyo Olympics*	0.389	-0.361	0.718	-0.641
CIFG16B1Mp12	*Tokyo Olympics*	0.328	-0.330	0.613	-0.594
CIFG16B1Mp16	*Tokyo Olympics*	0.278	-0.296	0.501	-0.517
CIFG16B1Mp20	*Tokyo Olympics*	0.237	-0.270	0.397	-0.446
CIFG16B1Mp24	*Tokyo Olympics*	0.207	-0.250	0.315	-0.388
CIFG16B1Mp28	*Tokyo Olympics*	0.186	-0.246	0.251	-0.350
CIFG16B1Mp01	*NBC 12 News*	0.073	-0.075	0.157	-0.161
CIFG16B1Mp02	*NBC 12 News*	0.141	-0.095	0.700	-0.684
CIFG16B1Mp04	*NBC 12 News*	0.235	-0.215	0.663	-0.640
CIFG16B1Mp08	*NBC 12 News*	0.183	-0.177	0.493	-0.475
CIFG16B1Mp12	*NBC 12 News*	0.142	-0.142	0.355	-0.350
CIFG16B1Mp16	*NBC 12 News*	0.118	-0.120	0.248	-0.253
CIFG16B1Mp20	*NBC 12 News*	0.103	-0.107	0.167	-0.181
CIFG16B1Mp24	*NBC 12 News*	0.094	-0.099	0.107	-0.128
CIFG16B1Mp28	*NBC 12 News*	0.090	-0.096	0.062	-0.088

TABLE CIII: Correlation between quality and traffic for single–layer traces.

Enc. M.	Video	Frame Level ρ_{XM}	Frame Level ρ_{XQ}	GoP level $\rho_{XM}^{(G)}$	GoP level $\rho_{XQ}^{(G)}$
CIFG16B3Mp01	*Sony Demo*	0.605	-0.545	0.733	-0.674
CIFG16B3Mp02	*Sony Demo*	0.339	-0.345	0.762	-0.643
CIFG16B3Mp04	*Sony Demo*	0.254	-0.270	0.696	-0.619
CIFG16B3Mp08	*Sony Demo*	0.192	-0.212	0.579	-0.574
CIFG16B3Mp12	*Sony Demo*	0.153	-0.180	0.451	-0.498
CIFG16B3Mp16	*Sony Demo*	0.121	-0.158	0.316	-0.415
CIFG16B3Mp20	*Sony Demo*	0.089	-0.134	0.182	-0.309
CIFG16B3Mp24	*Sony Demo*	0.067	-0.129	0.086	-0.264
CIFG16B3Mp28	*Sony Demo*	0.047	-0.122	0.010	-0.210
CIFG16B3Mp01	*Silence of the Lambs*	0.636	-0.396	0.748	-0.500
CIFG16B3Mp02	*Silence of the Lambs*	0.546	-0.451	0.790	-0.659
CIFG16B3Mp04	*Silence of the Lambs*	0.471	-0.396	0.738	-0.609
CIFG16B3Mp08	*Silence of the Lambs*	0.390	-0.329	0.632	-0.535
CIFG16B3Mp12	*Silence of the Lambs*	0.323	-0.297	0.522	-0.489

TABLE CIII: *continued*

CIFG16B3Mp16	*Silence of the Lambs*	0.278	-0.274	0.430	-0.439
CIFG16B3Mp20	*Silence of the Lambs*	0.244	-0.260	0.356	-0.400
CIFG16B3Mp24	*Silence of the Lambs*	0.227	-0.263	0.309	-0.388
CIFG16B3Mp28	*Silence of the Lambs*	0.215	-0.276	0.277	-0.390
CIFG16B3Mp01	*Star Wars 4*	0.513	-0.343	0.586	-0.441
CIFG16B3Mp02	*Star Wars 4*	0.043	-0.242	0.565	-0.461
CIFG16B3Mp04	*Star Wars 4*	0.036	-0.226	0.506	-0.443
CIFG16B3Mp08	*Star Wars 4*	0.053	-0.199	0.441	-0.394
CIFG16B3Mp12	*Star Wars 4*	0.061	-0.204	0.389	-0.402
CIFG16B3Mp16	*Star Wars 4*	0.072	-0.199	0.348	-0.372
CIFG16B3Mp20	*Star Wars 4*	0.081	-0.182	0.324	-0.323
CIFG16B3Mp24	*Star Wars 4*	0.091	-0.219	0.317	-0.356
CIFG16B3Mp28	*Star Wars 4*	0.108	-0.236	0.317	-0.366
CIFG16B3Mp01	*Tokyo Olympics*	0.413	-0.295	0.519	-0.385
CIFG16B3Mp02	*Tokyo Olympics*	0.469	-0.394	0.731	-0.578
CIFG16B3Mp04	*Tokyo Olympics*	0.454	-0.441	0.780	-0.657
CIFG16B3Mp08	*Tokyo Olympics*	0.426	-0.398	0.718	-0.639
CIFG16B3Mp12	*Tokyo Olympics*	0.357	-0.355	0.617	-0.596
CIFG16B3Mp16	*Tokyo Olympics*	0.300	-0.312	0.508	-0.523
CIFG16B3Mp20	*Tokyo Olympics*	0.250	-0.276	0.404	-0.452
CIFG16B3Mp24	*Tokyo Olympics*	0.214	-0.253	0.318	-0.394
CIFG16B3Mp28	*Tokyo Olympics*	0.187	-0.242	0.251	-0.354
CIFG16B3Mp01	*NBC 12 News*	0.158	-0.161	0.231	-0.236
CIFG16B3Mp02	*NBC 12 News*	0.179	-0.134	0.711	-0.694
CIFG16B3Mp04	*NBC 12 News*	0.250	-0.232	0.662	-0.637
CIFG16B3Mp08	*NBC 12 News*	0.195	-0.190	0.499	-0.476
CIFG16B3Mp12	*NBC 12 News*	0.153	-0.149	0.362	-0.349
CIFG16B3Mp16	*NBC 12 News*	0.122	-0.119	0.248	-0.247
CIFG16B3Mp20	*NBC 12 News*	0.102	-0.101	0.162	-0.171
CIFG16B3Mp24	*NBC 12 News*	0.087	-0.088	0.095	-0.114
CIFG16B3Mp28	*NBC 12 News*	0.081	-0.083	0.048	-0.075

TABLE CIV: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B7Mp01	*Sony Demo*	0.631	-0.573	0.729	-0.672
CIFG16B7Mp02	*Sony Demo*	0.390	-0.387	0.767	-0.648
CIFG16B7Mp04	*Sony Demo*	0.284	-0.299	0.687	-0.613
CIFG16B7Mp08	*Sony Demo*	0.200	-0.228	0.534	-0.551
CIFG16B7Mp12	*Sony Demo*	0.149	-0.190	0.380	-0.464
CIFG16B7Mp16	*Sony Demo*	0.109	-0.167	0.235	-0.381
CIFG16B7Mp20	*Sony Demo*	0.067	-0.137	0.098	-0.275
CIFG16B7Mp24	*Sony Demo*	0.040	-0.138	0.012	-0.250
CIFG16B7Mp28	*Sony Demo*	0.012	-0.131	-0.057	-0.205
CIFG16B7Mp01	*Silence of the Lambs*	0.697	-0.459	0.757	-0.545
CIFG16B7Mp02	*Silence of the Lambs*	0.593	-0.493	0.793	-0.659
CIFG16B7Mp04	*Silence of the Lambs*	0.496	-0.428	0.738	-0.605
CIFG16B7Mp08	*Silence of the Lambs*	0.418	-0.345	0.629	-0.523
CIFG16B7Mp12	*Silence of the Lambs*	0.331	-0.290	0.511	-0.466
CIFG16B7Mp16	*Silence of the Lambs*	0.273	-0.260	0.414	-0.422
CIFG16B7Mp20	*Silence of the Lambs*	0.224	-0.233	0.329	-0.380
CIFG16B7Mp24	*Silence of the Lambs*	0.204	-0.255	0.280	-0.395
CIFG16B7Mp28	*Silence of the Lambs*	0.184	-0.262	0.243	-0.398
CIFG16B7Mp01	*Star Wars 4*	0.539	-0.370	0.588	-0.444
CIFG16B7Mp02	*Star Wars 4*	0.066	-0.282	0.580	-0.473
CIFG16B7Mp04	*Star Wars 4*	0.043	-0.253	0.504	-0.440
CIFG16B7Mp08	*Star Wars 4*	0.061	-0.210	0.419	-0.379
CIFG16B7Mp12	*Star Wars 4*	0.071	-0.202	0.361	-0.377
CIFG16B7Mp16	*Star Wars 4*	0.082	-0.192	0.319	-0.353
CIFG16B7Mp20	*Star Wars 4*	0.103	-0.175	0.289	-0.317
CIFG16B7Mp24	*Star Wars 4*	0.112	-0.203	0.294	-0.347
CIFG16B7Mp28	*Star Wars 4*	0.133	-0.231	0.293	-0.371
CIFG16B7Mp01	*Tokyo Olympics*	0.443	-0.320	0.496	-0.372
CIFG16B7Mp02	*Tokyo Olympics*	0.520	-0.439	0.726	-0.568
CIFG16B7Mp04	*Tokyo Olympics*	0.517	-0.489	0.784	-0.649
CIFG16B7Mp08	*Tokyo Olympics*	0.469	-0.449	0.740	-0.642
CIFG16B7Mp12	*Tokyo Olympics*	0.405	-0.401	0.654	-0.612
CIFG16B7Mp16	*Tokyo Olympics*	0.347	-0.351	0.559	-0.552
CIFG16B7Mp20	*Tokyo Olympics*	0.290	-0.307	0.459	-0.490

TABLE CIV: *continued*

CIFG16B7Mp24	*Tokyo Olympics*	0.252	-0.283	0.377	-0.438
CIFG16B7Mp28	*Tokyo Olympics*	0.215	-0.264	0.303	-0.398
CIFG16B7Mp01	*NBC 12 News*	0.192	-0.196	0.232	-0.237
CIFG16B7Mp02	*NBC 12 News*	0.227	-0.182	0.719	-0.701
CIFG16B7Mp04	*NBC 12 News*	0.283	-0.268	0.668	-0.641
CIFG16B7Mp08	*NBC 12 News*	0.160	-0.221	0.518	-0.488
CIFG16B7Mp12	*NBC 12 News*	0.127	-0.170	0.380	-0.359
CIFG16B7Mp16	*NBC 12 News*	0.115	-0.131	0.260	-0.251
CIFG16B7Mp20	*NBC 12 News*	0.097	-0.102	0.160	-0.165
CIFG16B7Mp24	*NBC 12 News*	0.084	-0.084	0.086	-0.104
CIFG16B7Mp28	*NBC 12 News*	0.078	-0.077	0.033	-0.066

TABLE CV: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B15Mp01	*Sony Demo*	0.643	-0.594	0.710	-0.663
CIFG16B15Mp02	*Sony Demo*	0.465	-0.438	0.771	-0.645
CIFG16B15Mp04	*Sony Demo*	0.356	-0.348	0.696	-0.606
CIFG16B15Mp08	*Sony Demo*	0.250	-0.269	0.542	-0.550
CIFG16B15Mp12	*Sony Demo*	0.182	-0.226	0.379	-0.472
CIFG16B15Mp16	*Sony Demo*	0.132	-0.202	0.229	-0.401
CIFG16B15Mp20	*Sony Demo*	0.080	-0.171	0.085	-0.301
CIFG16B15Mp24	*Sony Demo*	0.049	-0.184	0.007	-0.295
CIFG16B15Mp28	*Sony Demo*	0.011	-0.180	-0.063	-0.257
CIFG16B15Mp01	*Silence of the Lambs*	0.732	-0.492	0.761	-0.556
CIFG16B15Mp02	*Silence of the Lambs*	0.650	-0.533	0.794	-0.661
CIFG16B15Mp04	*Silence of the Lambs*	0.572	-0.463	0.735	-0.595
CIFG16B15Mp08	*Silence of the Lambs*	0.464	-0.374	0.624	-0.503
CIFG16B15Mp12	*Silence of the Lambs*	0.364	-0.309	0.496	-0.418
CIFG16B15Mp16	*Silence of the Lambs*	0.280	-0.271	0.377	-0.373
CIFG16B15Mp20	*Silence of the Lambs*	0.221	-0.245	0.277	-0.325
CIFG16B15Mp24	*Silence of the Lambs*	0.188	-0.304	0.218	-0.393
CIFG16B15Mp28	*Silence of the Lambs*	0.149	-0.302	0.164	-0.377
CIFG16B15Mp01	*Star Wars 4*	0.559	-0.391	0.586	-0.446
CIFG16B15Mp02	*Star Wars 4*	0.409	-0.333	0.593	-0.482
CIFG16B15Mp04	*Star Wars 4*	0.337	-0.291	0.496	-0.429
CIFG16B15Mp08	*Star Wars 4*	0.270	-0.241	0.384	-0.352
CIFG16B15Mp12	*Star Wars 4*	0.241	-0.245	0.322	-0.344
CIFG16B15Mp16	*Star Wars 4*	0.232	-0.246	0.286	-0.335
CIFG16B15Mp20	*Star Wars 4*	0.226	-0.246	0.258	-0.334
CIFG16B15Mp24	*Star Wars 4*	0.259	-0.294	0.282	-0.362
CIFG16B15Mp28	*Star Wars 4*	0.261	-0.324	0.268	-0.392
CIFG16B15Mp01	*NBC 12 News*	0.180	-0.185	0.201	-0.206
CIFG16B15Mp02	*NBC 12 News*	0.283	-0.238	0.711	-0.694
CIFG16B15Mp04	*NBC 12 News*	0.346	-0.322	0.664	-0.635
CIFG16B15Mp08	*NBC 12 News*	0.289	-0.269	0.523	-0.486
CIFG16B15Mp12	*NBC 12 News*	0.220	-0.205	0.380	-0.352
CIFG16B15Mp16	*NBC 12 News*	0.160	-0.151	0.247	-0.235
CIFG16B15Mp20	*NBC 12 News*	0.109	-0.108	0.131	-0.137
CIFG16B15Mp24	*NBC 12 News*	0.070	-0.077	0.042	-0.065
CIFG16B15Mp28	*NBC 12 News*	0.043	-0.065	-0.018	-0.030

TABLE CVI: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG12B2Mp01	*Sony Demo*	0.583	-0.518	0.743	-0.679
CIFG12B2Mp02	*Sony Demo*	0.274	-0.297	0.782	-0.654
CIFG12B2Mp04	*Sony Demo*	0.216	-0.237	0.731	-0.638
CIFG12B2Mp08	*Sony Demo*	0.189	-0.201	0.644	-0.615
CIFG12B2Mp12	*Sony Demo*	0.169	-0.181	0.547	-0.561
CIFG12B2Mp16	*Sony Demo*	0.152	-0.168	0.436	-0.496
CIFG12B2Mp20	*Sony Demo*	0.135	-0.157	0.314	-0.409
CIFG12B2Mp24	*Sony Demo*	0.124	-0.154	0.218	-0.360
CIFG12B2Mp28	*Sony Demo*	0.113	-0.154	0.134	-0.305
CIFG12B2Mp01	*Silence of the Lambs*	0.623	-0.375	0.758	-0.481

TABLE CVI: *continued*

CIFG12B2Mp02	*Silence of the Lambs*	0.496	-0.412	0.804	-0.669
CIFG12B2Mp04	*Silence of the Lambs*	0.436	-0.366	0.759	-0.628
CIFG12B2Mp08	*Silence of the Lambs*	0.366	-0.310	0.667	-0.561
CIFG12B2Mp12	*Silence of the Lambs*	0.313	-0.290	0.567	-0.526
CIFG12B2Mp16	*Silence of the Lambs*	0.279	-0.273	0.478	-0.475
CIFG12B2Mp20	*Silence of the Lambs*	0.254	-0.267	0.406	-0.437
CIFG12B2Mp24	*Silence of the Lambs*	0.242	-0.269	0.358	-0.418
CIFG12B2Mp28	*Silence of the Lambs*	0.234	-0.288	0.324	-0.423

C. H.264 SVC

TABLE CVII: Correlation between quality and traffic for single–layer traces.

Enc. M.	Video	Frame Level ρ_{XM}	Frame Level ρ_{XQ}	GoP level $\rho_{XM}^{(G)}$	GoP level $\rho_{XQ}^{(G)}$
CIFG16B1SV10	*Sony Demo*	-0.292	-0.047	0.725	-0.650
CIFG16B1SV16	*Sony Demo*	-0.195	-0.048	0.769	-0.653
CIFG16B1SV22	*Sony Demo*	-0.039	-0.116	0.729	-0.645
CIFG16B1SV24	*Sony Demo*	0.018	-0.132	0.688	-0.629
CIFG16B1SV28	*Sony Demo*	0.086	-0.143	0.620	-0.605
CIFG16B1SV34	*Sony Demo*	0.113	-0.134	0.599	-0.605
CIFG16B1SV38	*Sony Demo*	0.108	-0.123	0.587	-0.597
CIFG16B1SV42	*Sony Demo*	0.109	-0.117	0.560	-0.574
CIFG16B1SV48	*Sony Demo*	0.097	-0.111	0.495	-0.542
CIFG16B1SV10	*Silence of the Lambs*	-0.176	0.058	0.656	-0.252
CIFG16B1SV16	*Silence of the Lambs*	0.161	-0.117	0.763	-0.368
CIFG16B1SV22	*Silence of the Lambs*	0.298	-0.200	0.750	-0.438
CIFG16B1SV24	*Silence of the Lambs*	0.312	-0.210	0.735	-0.445
CIFG16B1SV28	*Silence of the Lambs*	0.314	-0.212	0.703	-0.448
CIFG16B1SV34	*Silence of the Lambs*	0.302	-0.201	0.684	-0.447
CIFG16B1SV38	*Silence of the Lambs*	0.292	-0.263	0.688	-0.618
CIFG16B1SV42	*Silence of the Lambs*	0.280	-0.184	0.690	-0.460
CIFG16B1SV48	*Silence of the Lambs*	0.241	-0.230	0.663	-0.651
CIFG16B1SV10	*Star Wars 4*	-0.423	0.097	0.410	-0.273
CIFG16B1SV16	*Star Wars 4*	-0.082	-0.035	0.527	-0.296
CIFG16B1SV22	*Star Wars 4*	0.174	-0.125	0.529	-0.325
CIFG16B1SV24	*Star Wars 4*	0.192	-0.133	0.520	-0.332
CIFG16B1SV28	*Star Wars 4*	0.191	-0.136	0.500	-0.338
CIFG16B1SV34	*Star Wars 4*	0.185	-0.129	0.523	-0.343
CIFG16B1SV38	*Star Wars 4*	0.185	-0.192	0.550	-0.547
CIFG16B1SV42	*Star Wars 4*	0.191	-0.194	0.568	-0.559
CIFG16B1SV48	*Star Wars 4*	0.186	-0.183	0.579	-0.557
CIFG16B1SV10	*Tokyo olympics*	-0.121	0.085	0.760	-0.500
CIFG16B1SV16	*Tokyo olympics*	-0.109	0.028	0.776	-0.585
CIFG16B1SV22	*Tokyo olympics*	0.112	-0.171	0.769	-0.617
CIFG16B1SV24	*Tokyo olympics*	0.180	-0.220	0.764	-0.630
CIFG16B1SV28	*Tokyo olympics*	0.257	-0.266	0.734	-0.634
CIFG16B1SV34	*Tokyo olympics*	0.280	-0.270	0.686	-0.623
CIFG16B1SV38	*Tokyo olympics*	0.268	-0.269	0.658	-0.640
CIFG16B1SV42	*Tokyo olympics*	0.250	-0.241	0.623	-0.592
CIFG16B1SV48	*Tokyo olympics*	0.188	-0.207	0.536	-0.578
CIFG16B1SV10	*NBC 12 News*	-0.776	0.790	0.523	-0.513
CIFG16B1SV16	*NBC 12 News*	-0.682	0.704	0.788	-0.777
CIFG16B1SV22	*NBC 12 News*	-0.361	0.368	0.795	-0.766
CIFG16B1SV24	*NBC 12 News*	-0.217	0.205	0.739	-0.709
CIFG16B1SV28	*NBC 12 News*	-0.047	0.020	0.629	-0.609
CIFG16B1SV34	*NBC 12 News*	0.052	-0.072	0.503	-0.501
CIFG16B1SV38	*NBC 12 News*	0.070	-0.084	0.441	-0.447
CIFG16B1SV42	*NBC 12 News*	0.071	-0.081	0.370	-0.384
CIFG16B1SV48	*NBC 12 News*	0.044	-0.051	0.265	-0.287

TABLE CVIII: Correlation between quality and traffic for single–layer traces.

Enc. M.	Video	Frame Level ρ_{XM}	Frame Level ρ_{XQ}	GoP level $\rho_{XM}^{(G)}$	GoP level $\rho_{XQ}^{(G)}$
CIFG16B3SV10	*Sony Demo*	-0.339	0.064	0.864	-0.707
CIFG16B3SV16	*Sony Demo*	-0.282	0.082	0.871	-0.714
CIFG16B3SV22	*Sony Demo*	-0.199	0.012	0.858	-0.728
CIFG16B3SV24	*Sony Demo*	-0.149	-0.020	0.839	-0.718
CIFG16B3SV28	*Sony Demo*	-0.063	-0.056	0.797	-0.699
CIFG16B3SV34	*Sony Demo*	0.051	-0.094	0.731	-0.675
CIFG16B3SV38	*Sony Demo*	0.087	-0.103	0.704	-0.670
CIFG16B3SV42	*Sony Demo*	0.096	-0.102	0.670	-0.646
CIFG16B3SV48	*Sony Demo*	0.093	-0.099	0.606	-0.596
CIFG16B3SV10	*Silence of the Lambs*	-0.347	0.260	0.806	-0.336
CIFG16B3SV16	*Silence of the Lambs*	-0.036	0.026	0.859	-0.428
CIFG16B3SV22	*Silence of the Lambs*	0.144	-0.113	0.850	-0.495
CIFG16B3SV24	*Silence of the Lambs*	0.181	-0.138	0.838	-0.501

TABLE CVIII: *continued*

CIFG16B3SV28	*Silence of the Lambs*	0.215	-0.158	0.823	-0.514
CIFG16B3SV34	*Silence of the Lambs*	0.244	-0.200	0.801	-0.607
CIFG16B3SV38	*Silence of the Lambs*	0.253	-0.167	0.790	-0.502
CIFG16B3SV42	*Silence of the Lambs*	0.244	-0.160	0.787	-0.507
CIFG16B3SV48	*Silence of the Lambs*	0.218	-0.147	0.765	-0.512
CIFG16B3SV10	*Star Wars 4*	-0.543	0.264	0.649	-0.342
CIFG16B3SV16	*Star Wars 4*	-0.238	0.064	0.725	-0.357
CIFG16B3SV22	*Star Wars 4*	0.093	-0.083	0.738	-0.397
CIFG16B3SV24	*Star Wars 4*	0.100	-0.088	0.718	-0.400
CIFG16B3SV28	*Star Wars 4*	0.114	-0.096	0.694	-0.415
CIFG16B3SV34	*Star Wars 4*	0.134	-0.104	0.653	-0.407
CIFG16B3SV38	*Star Wars 4*	0.149	-0.160	0.649	-0.622
CIFG16B3SV42	*Star Wars 4*	0.153	-0.163	0.661	-0.637
CIFG16B3SV48	*Star Wars 4*	0.156	-0.155	0.657	-0.599
CIFG16B3SV10	*Tokyo olympics*	-0.287	0.299	0.740	-0.546
CIFG16B3SV16	*Tokyo olympics*	-0.290	0.280	0.783	-0.604
CIFG16B3SV22	*Tokyo olympics*	-0.101	0.057	0.831	-0.663
CIFG16B3SV24	*Tokyo olympics*	-0.023	-0.028	0.837	-0.680
CIFG16B3SV28	*Tokyo olympics*	0.062	-0.111	0.839	-0.700
CIFG16B3SV34	*Tokyo olympics*	0.161	-0.179	0.806	-0.707
CIFG16B3SV38	*Tokyo olympics*	0.196	-0.194	0.773	-0.683
CIFG16B3SV42	*Tokyo olympics*	0.194	-0.188	0.732	-0.663
CIFG16B3SV48	*Tokyo olympics*	0.161	-0.161	0.642	-0.610
CIFG16B3SV10	*NBC 12 News*	-0.817	0.847	0.409	-0.394
CIFG16B3SV16	*NBC 12 News*	-0.744	0.800	0.745	-0.733
CIFG16B3SV22	*NBC 12 News*	-0.499	0.588	0.826	-0.797
CIFG16B3SV24	*NBC 12 News*	-0.369	0.440	0.822	-0.788
CIFG16B3SV28	*NBC 12 News*	-0.196	0.224	0.780	-0.746
CIFG16B3SV34	*NBC 12 News*	-0.036	0.023	0.704	-0.678
CIFG16B3SV38	*NBC 12 News*	0.030	-0.044	0.636	-0.620
CIFG16B3SV42	*NBC 12 News*	0.050	-0.060	0.570	-0.565
CIFG16B3SV48	*NBC 12 News*	0.044	-0.051	0.442	-0.452

TABLE CIX: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B7SV10	*Sony Demo*	-0.284	0.050	0.860	-0.695
CIFG16B7SV16	*Sony Demo*	-0.231	0.067	0.878	-0.721
CIFG16B7SV22	*Sony Demo*	-0.187	0.034	0.857	-0.751
CIFG16B7SV24	*Sony Demo*	-0.164	0.016	0.855	-0.753
CIFG16B7SV28	*Sony Demo*	-0.105	-0.021	0.852	-0.752
CIFG16B7SV34	*Sony Demo*	0.004	-0.066	0.828	-0.731
CIFG16B7SV38	*Sony Demo*	0.057	-0.082	0.803	-0.723
CIFG16B7SV42	*Sony Demo*	0.087	-0.093	0.765	-0.718
CIFG16B7SV48	*Sony Demo*	0.087	-0.092	0.687	-0.674
CIFG16B7SV10	*Silence of the Lambs*	-0.302	0.253	0.769	-0.334
CIFG16B7SV16	*Silence of the Lambs*	-0.029	0.051	0.871	-0.457
CIFG16B7SV22	*Silence of the Lambs*	0.119	-0.084	0.877	-0.526
CIFG16B7SV24	*Silence of the Lambs*	0.144	-0.107	0.876	-0.535
CIFG16B7SV28	*Silence of the Lambs*	0.183	-0.134	0.880	-0.548
CIFG16B7SV34	*Silence of the Lambs*	0.220	-0.177	0.878	-0.656
CIFG16B7SV38	*Silence of the Lambs*	0.228	-0.149	0.873	-0.546
CIFG16B7SV42	*Silence of the Lambs*	0.226	-0.199	0.859	-0.748
CIFG16B7SV48	*Silence of the Lambs*	0.201	-0.180	0.827	-0.738
CIFG16B7SV10	*Star Wars 4*	-0.499	0.263	0.627	-0.340
CIFG16B7SV16	*Star Wars 4*	-0.235	0.089	0.784	-0.390
CIFG16B7SV22	*Star Wars 4*	0.013	-0.044	0.824	-0.436
CIFG16B7SV24	*Star Wars 4*	0.076	-0.072	0.819	-0.443
CIFG16B7SV28	*Star Wars 4*	0.095	-0.083	0.796	-0.459
CIFG16B7SV34	*Star Wars 4*	0.114	-0.091	0.756	-0.456
CIFG16B7SV38	*Star Wars 4*	0.121	-0.093	0.737	-0.440
CIFG16B7SV42	*Star Wars 4*	0.134	-0.097	0.732	-0.430
CIFG16B7SV48	*Star Wars 4*	0.134	-0.139	0.719	-0.671
CIFG16B7SV10	*Tokyo olympics*	-0.251	0.288	0.674	-0.532
CIFG16B7SV16	*Tokyo olympics*	-0.248	0.268	0.757	-0.595
CIFG16B7SV22	*Tokyo olympics*	-0.080	0.073	0.825	-0.664
CIFG16B7SV24	*Tokyo olympics*	-0.025	0.008	0.842	-0.689
CIFG16B7SV28	*Tokyo olympics*	0.043	-0.076	0.863	-0.728
CIFG16B7SV34	*Tokyo olympics*	0.120	-0.142	0.874	-0.754

TABLE CIX: *continued*

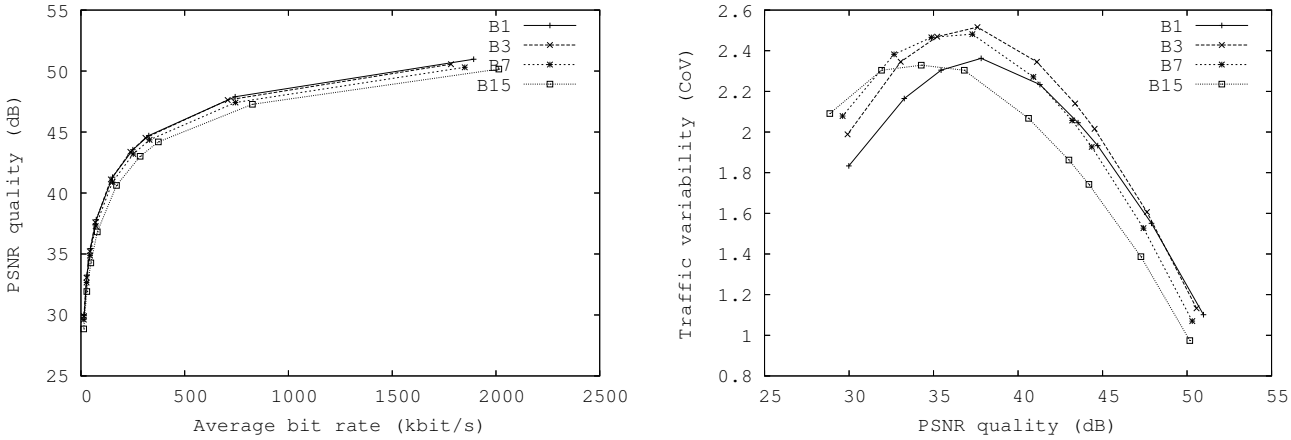
CIFG16B7SV38	*Tokyo olympics*	0.149	-0.156	0.857	-0.738
CIFG16B7SV42	*Tokyo olympics*	0.160	-0.167	0.815	-0.760
CIFG16B7SV48	*Tokyo olympics*	0.132	-0.142	0.710	-0.702
CIFG16B7SV10	*NBC 12 News*	-0.780	0.830	0.321	-0.306
CIFG16B7SV16	*NBC 12 News*	-0.694	0.779	0.680	-0.667
CIFG16B7SV22	*NBC 12 News*	-0.450	0.577	0.775	-0.747
CIFG16B7SV24	*NBC 12 News*	-0.344	0.458	0.801	-0.769
CIFG16B7SV28	*NBC 12 News*	-0.185	0.245	0.815	-0.782
CIFG16B7SV34	*NBC 12 News*	-0.051	0.053	0.785	-0.755
CIFG16B7SV38	*NBC 12 News*	0.005	-0.014	0.756	-0.727
CIFG16B7SV42	*NBC 12 News*	0.040	-0.049	0.699	-0.676
CIFG16B7SV48	*NBC 12 News*	0.044	-0.049	0.568	-0.563

TABLE CX: Correlation between quality and traffic for single–layer traces.

		Frame Level		GoP level	
Enc. M.	Video	ρ_{XM}	ρ_{XQ}	$\rho_{XM}^{(G)}$	$\rho_{XQ}^{(G)}$
CIFG16B15SV10	*Sony Demo*	-0.282	0.114	0.848	-0.680
CIFG16B15SV16	*Sony Demo*	-0.210	0.078	0.873	-0.716
CIFG16B15SV22	*Sony Demo*	-0.185	0.069	0.832	-0.750
CIFG16B15SV24	*Sony Demo*	-0.171	0.051	0.826	-0.757
CIFG16B15SV28	*Sony Demo*	-0.139	0.023	0.829	-0.775
CIFG16B15SV34	*Sony Demo*	-0.066	-0.024	0.837	-0.768
CIFG16B15SV38	*Sony Demo*	-0.006	-0.048	0.845	-0.757
CIFG16B15SV42	*Sony Demo*	0.045	-0.067	0.852	-0.740
CIFG16B15SV48	*Sony Demo*	0.071	-0.077	0.827	-0.764
CIFG16B15SV10	*Silence of the Lambs*	-0.301	0.319	0.683	-0.314
CIFG16B15SV16	*Silence of the Lambs*	-0.033	0.085	0.844	-0.450
CIFG16B15SV22	*Silence of the Lambs*	0.082	-0.033	0.871	-0.536
CIFG16B15SV24	*Silence of the Lambs*	0.106	-0.063	0.877	-0.550
CIFG16B15SV28	*Silence of the Lambs*	0.135	-0.092	0.898	-0.567
CIFG16B15SV34	*Silence of the Lambs*	0.173	-0.118	0.926	-0.580
CIFG16B15SV38	*Silence of the Lambs*	0.188	-0.123	0.933	-0.584
CIFG16B15SV42	*Silence of the Lambs*	0.187	-0.122	0.931	-0.592
CIFG16B15SV48	*Silence of the Lambs*	0.171	-0.147	0.906	-0.783
CIFG16B15SV10	*Star Wars 4*	-0.486	0.337	0.590	-0.331
CIFG16B15SV16	*Star Wars 4*	-0.240	0.126	0.750	-0.390
CIFG16B15SV22	*Star Wars 4*	-0.029	-0.011	0.844	-0.462
CIFG16B15SV24	*Star Wars 4*	-0.006	-0.025	0.858	-0.472
CIFG16B15SV28	*Star Wars 4*	0.039	-0.049	0.866	-0.491
CIFG16B15SV34	*Star Wars 4*	0.069	-0.065	0.852	-0.505
CIFG16B15SV38	*Star Wars 4*	0.082	-0.072	0.837	-0.496
CIFG16B15SV42	*Star Wars 4*	0.093	-0.095	0.828	-0.630
CIFG16B15SV48	*Star Wars 4*	0.098	-0.106	0.806	-0.690
CIFG16B15SV10	*Tokyo olympics*	-0.226	0.311	0.589	-0.499
CIFG16B15SV16	*Tokyo olympics*	-0.214	0.268	0.724	-0.585
CIFG16B15SV22	*Tokyo olympics*	-0.080	0.121	0.797	-0.645
CIFG16B15SV24	*Tokyo olympics*	-0.030	0.053	0.821	-0.680
CIFG16B15SV28	*Tokyo olympics*	0.026	-0.029	0.853	-0.733
CIFG16B15SV34	*Tokyo olympics*	0.078	-0.094	0.898	-0.772
CIFG16B15SV38	*Tokyo olympics*	0.102	-0.114	0.905	-0.781
CIFG16B15SV42	*Tokyo olympics*	0.111	-0.119	0.886	-0.782
CIFG16B15SV48	*Tokyo olympics*	0.094	-0.105	0.805	-0.770
CIFG16B15SV10	*NBC 12 News*	-0.766	0.843	0.259	-0.246
CIFG16B15SV16	*NBC 12 News*	-0.668	0.785	0.618	-0.605
CIFG16B15SV22	*NBC 12 News*	-0.440	0.616	0.739	-0.711
CIFG16B15SV24	*NBC 12 News*	-0.342	0.510	0.762	-0.732
CIFG16B15SV28	*NBC 12 News*	-0.201	0.318	0.799	-0.771
CIFG16B15SV34	*NBC 12 News*	-0.082	0.118	0.813	-0.794
CIFG16B15SV38	*NBC 12 News*	-0.031	0.038	0.814	-0.793
CIFG16B15SV42	*NBC 12 News*	0.002	-0.005	0.803	-0.780
CIFG16B15SV48	*NBC 12 News*	0.020	-0.025	0.724	-0.705

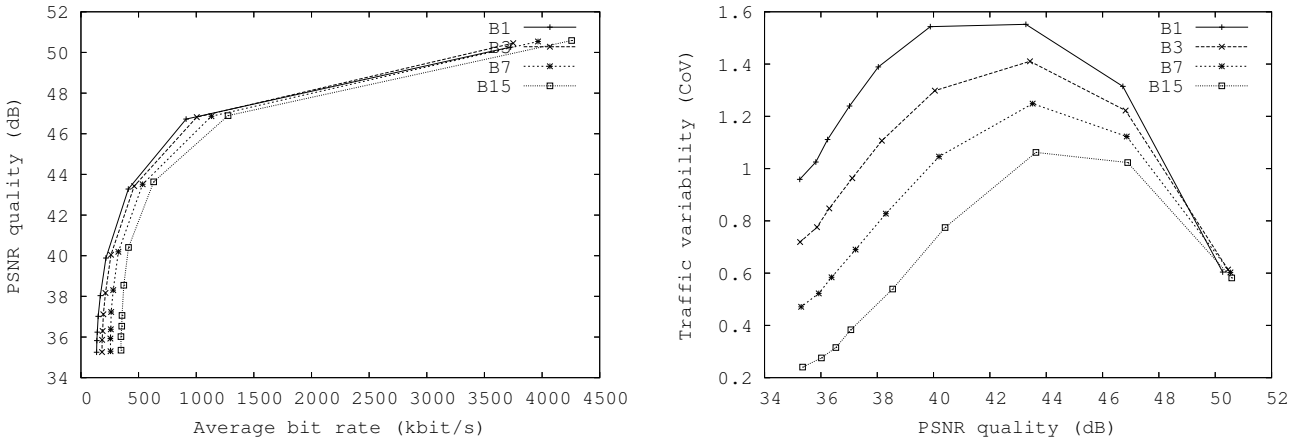
APPENDIX VI
GOP STRUCTURE COMPARISONS

This appendix provides RD and VD curves comparing different GoP structures.



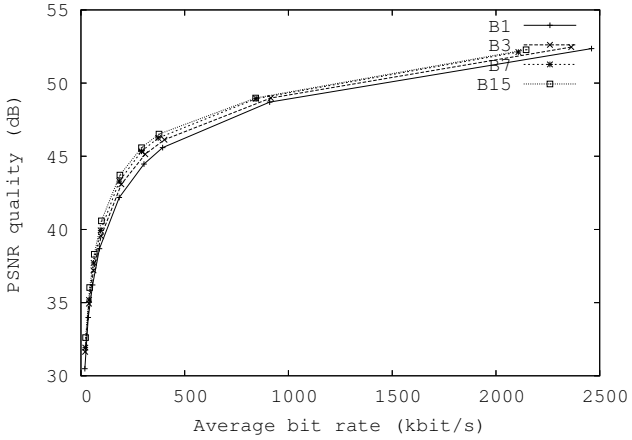
(a) RD curves (b) VD curves

Fig. 15. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Silence of the Lambs* sequence, encoded with H.264/AVC.

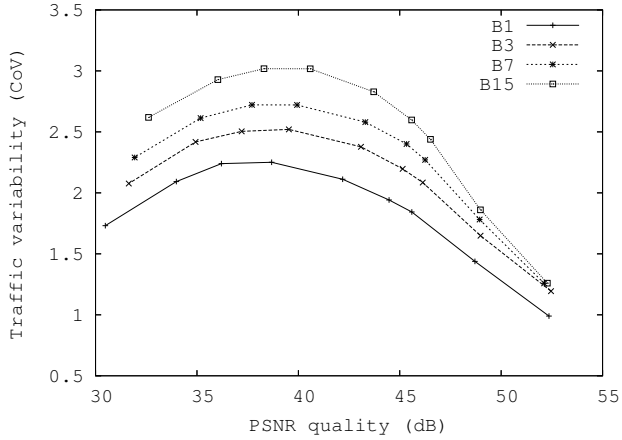


(a) RD curves (b) VD curves

Fig. 16. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Silence of the Lambs* sequence, encoded with MPEG–4 Part 2.

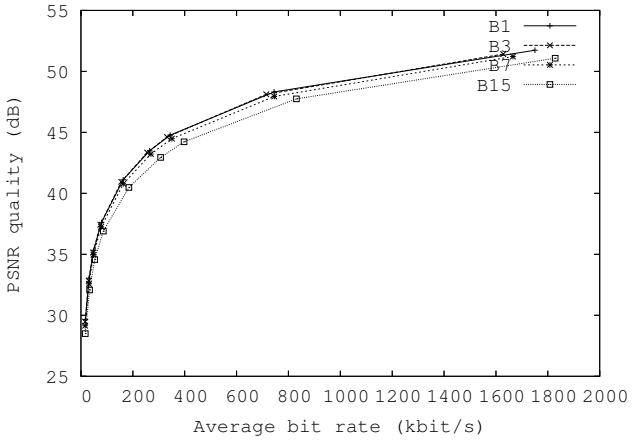


(a) RD curves

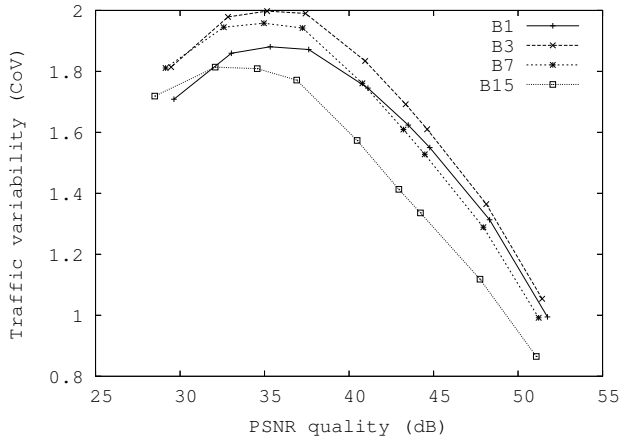


(b) VD curves

Fig. 17. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Silence of the Lambs* sequence, encoded with H.264 SVC.

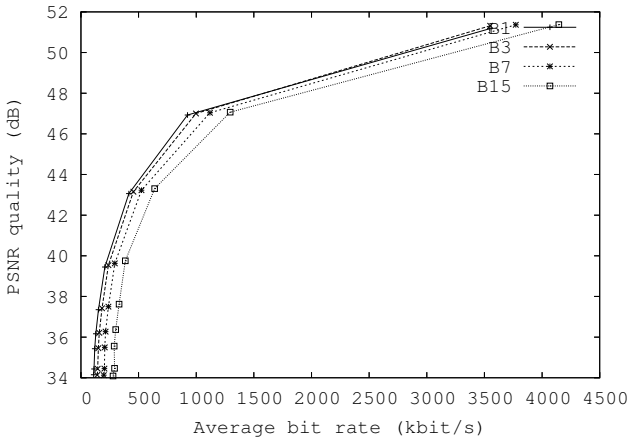


(a) RD curves

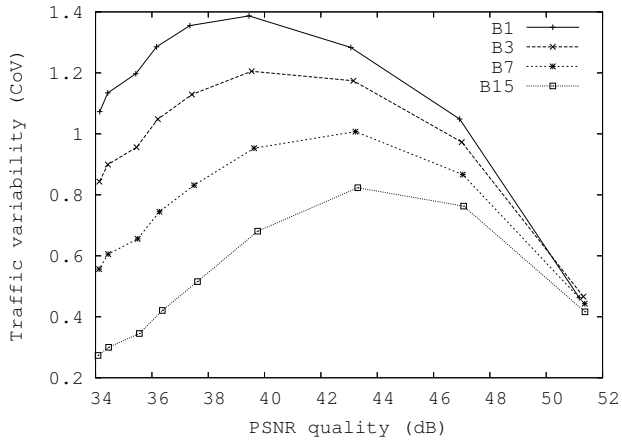


(b) VD curves

Fig. 18. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Star Wars 4* sequence, encoded with H.264/AVC.

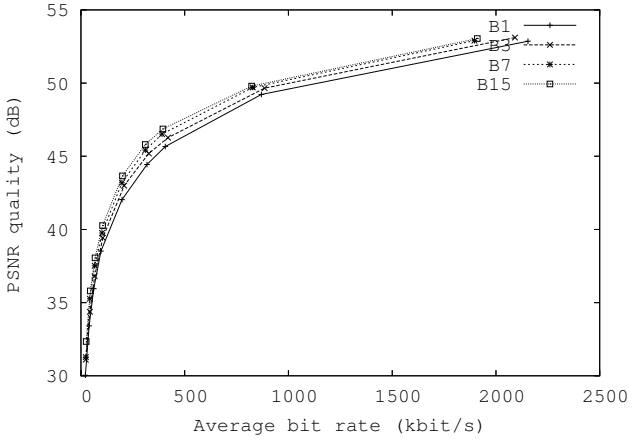


(a) RD curves

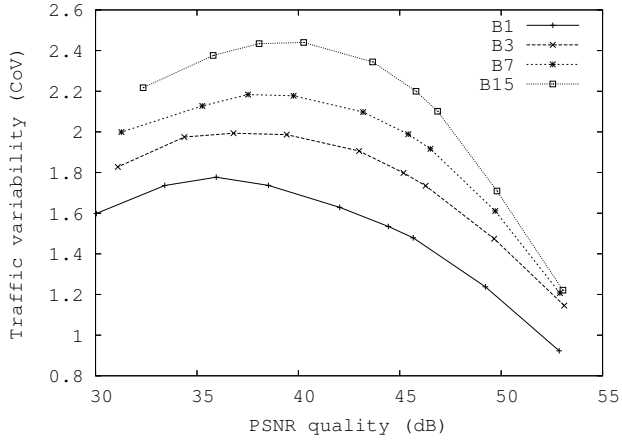


(b) VD curves

Fig. 19. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Star Wars 4* sequence, encoded with MPEG–4 Part 2.

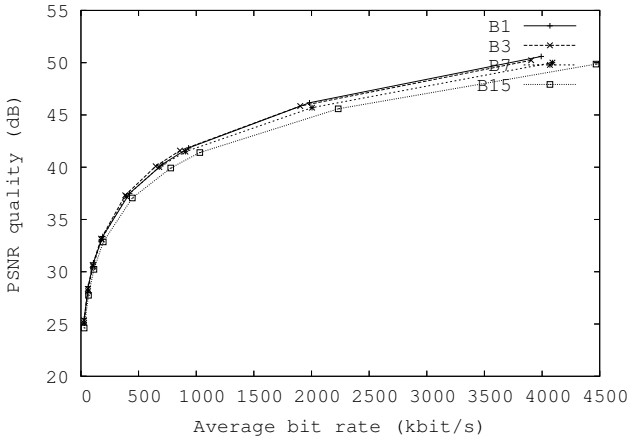


(a) RD curves

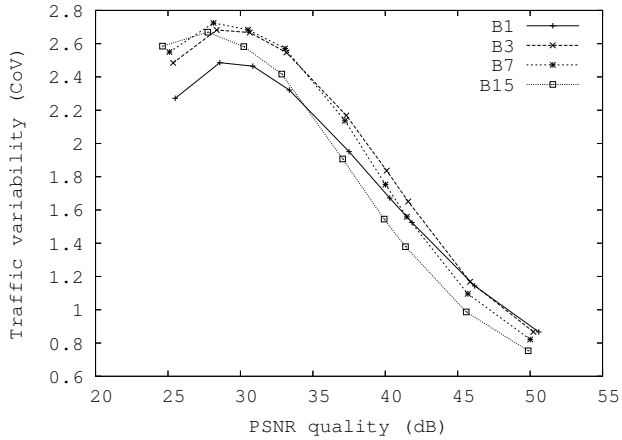


(b) VD curves

Fig. 20. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Star Wars 4* sequence, encoded with H.264 SVC.

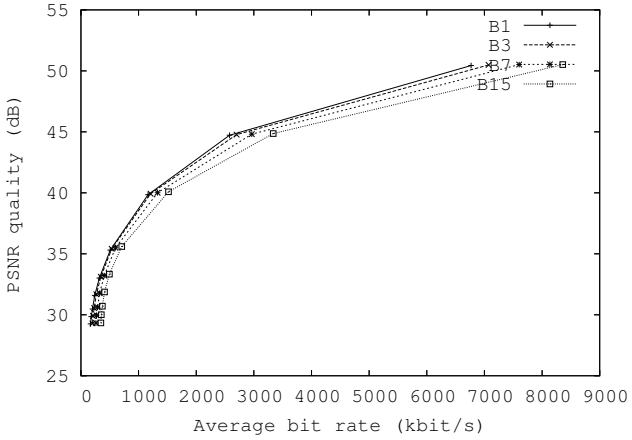


(a) RD curves

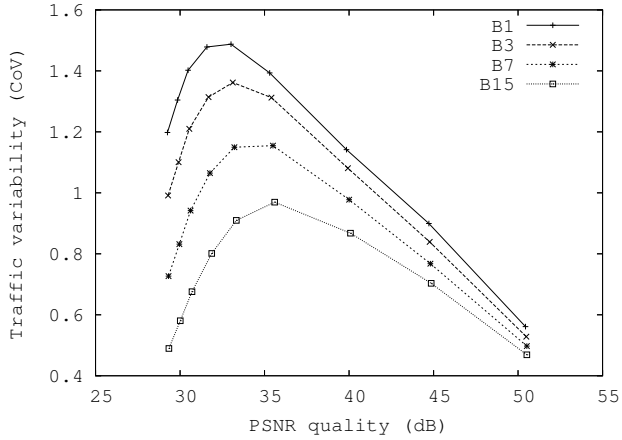


(b) VD curves

Fig. 21. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Sony Demo* sequence, encoded with H.264/AVC.

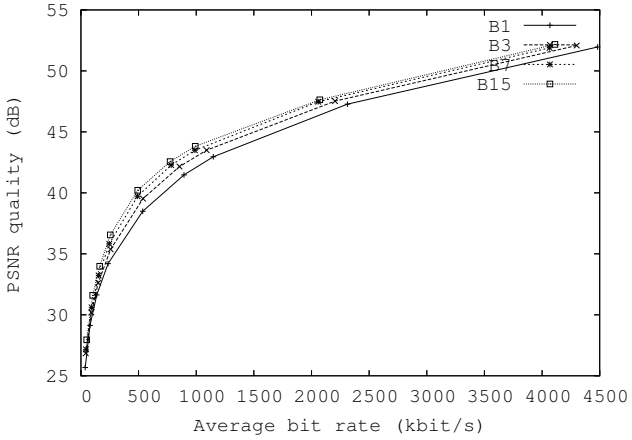


(a) RD curves

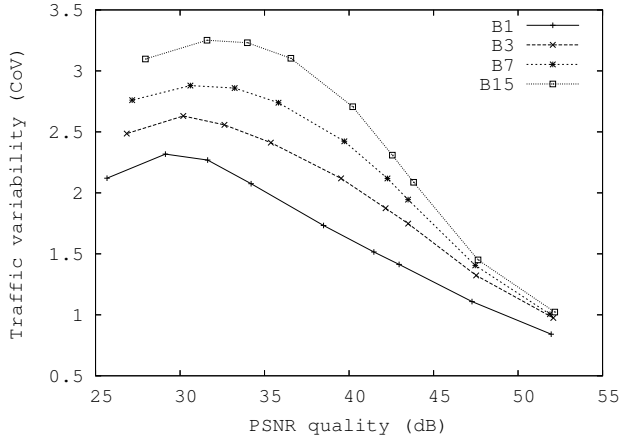


(b) VD curves

Fig. 22. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Sony Demo* sequence, encoded with MPEG–4 Part 2.

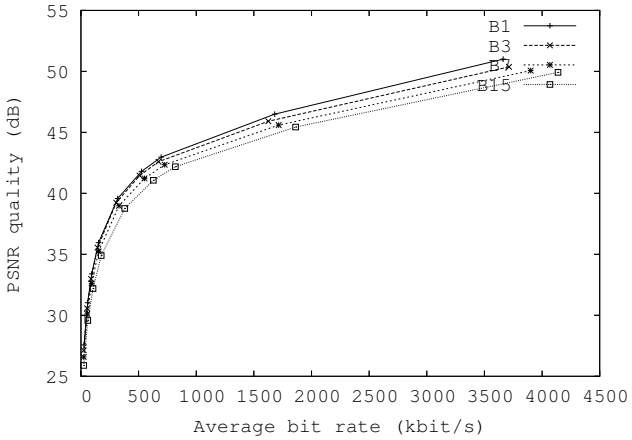


(a) RD curves

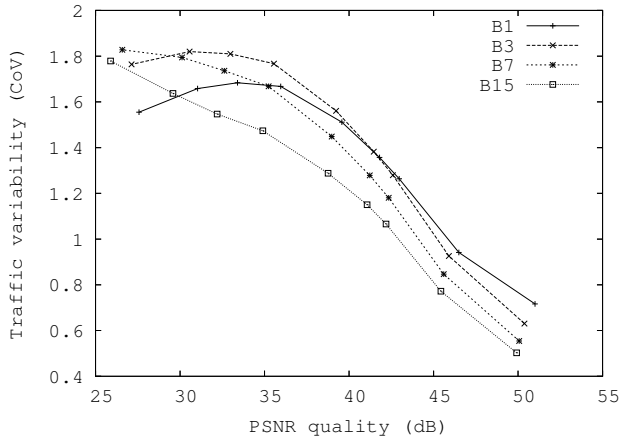


(b) VD curves

Fig. 23. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Sony Demo* sequence, encoded with H.264 SVC.

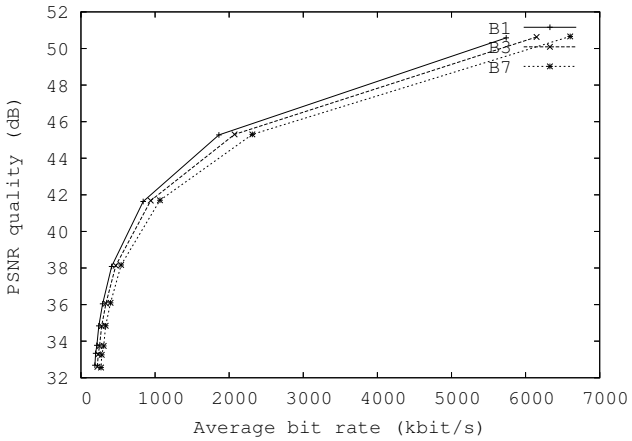


(a) RD curves

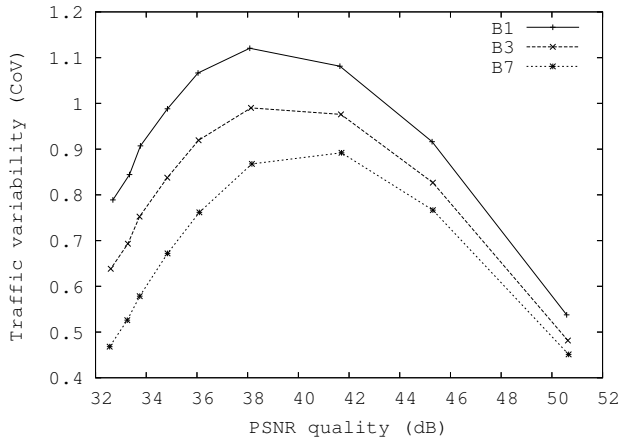


(b) VD curves

Fig. 24. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Tokyo Olympics* sequence, encoded with H.264/AVC.

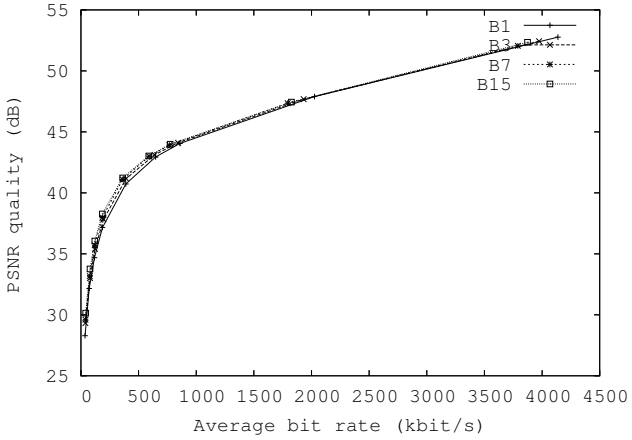


(a) RD curves

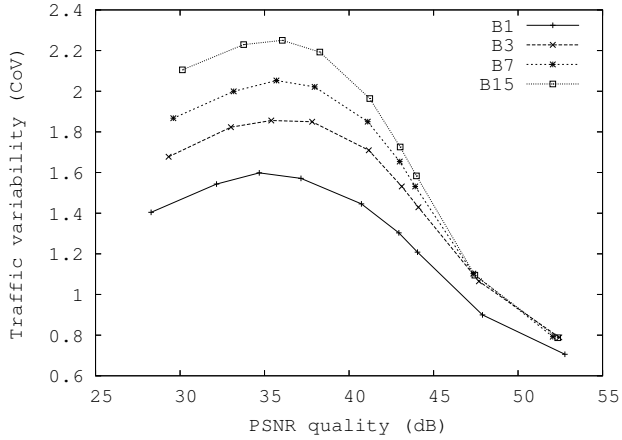


(b) VD curves

Fig. 25. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Tokyo Olympics* sequence, encoded with MPEG–4 Part 2.

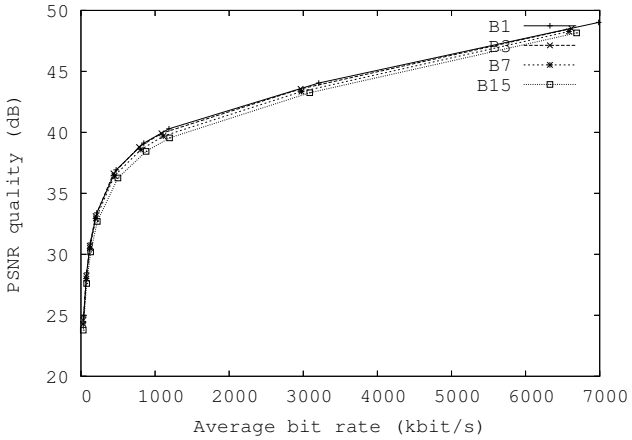


(a) RD curves

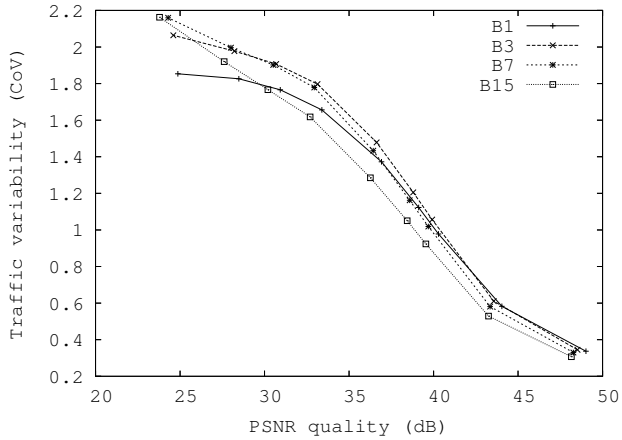


(b) VD curves

Fig. 26. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *Tokyo Olympics* sequence, encoded with H.264 SVC.

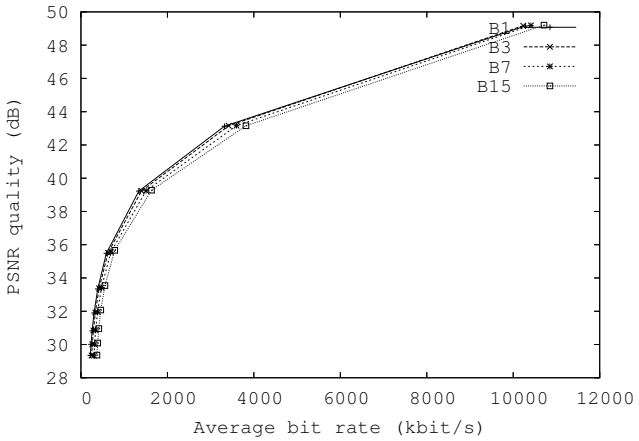


(a) RD curves

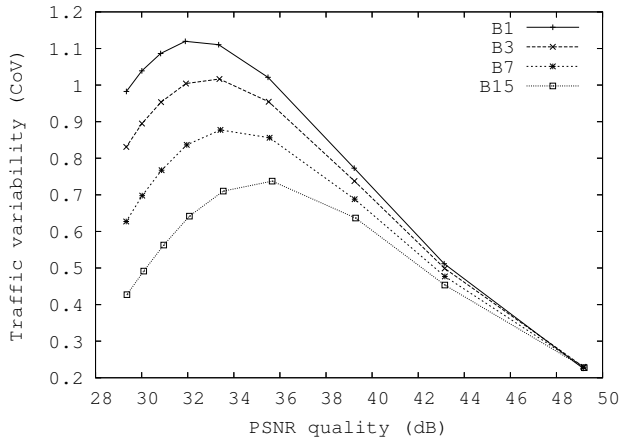


(b) VD curves

Fig. 27. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *NBC 12 News* sequence, encoded with H.264/AVC.

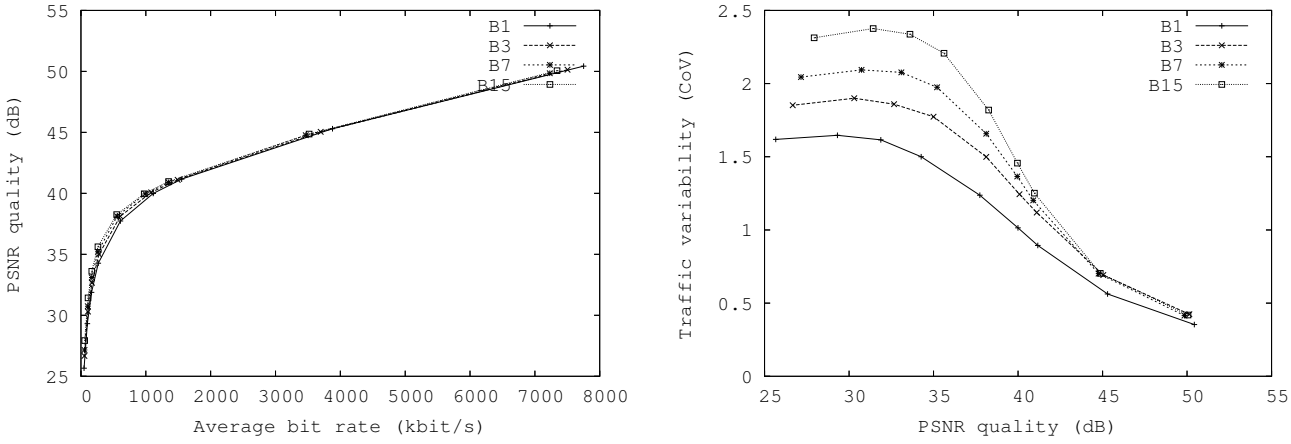


(a) RD curves



(b) VD curves

Fig. 28. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *NBC 12 News* sequence, encoded with MPEG–4 Part 2.



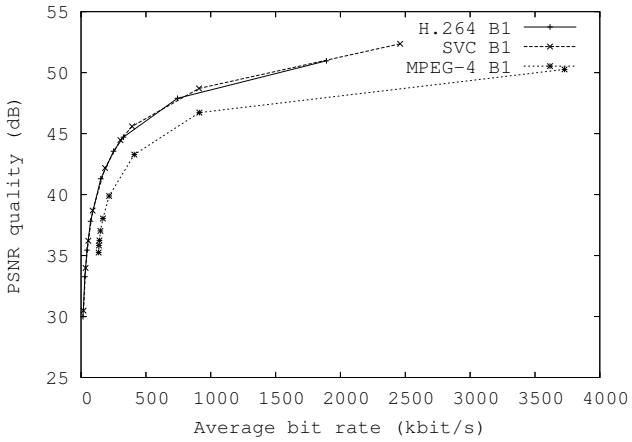
(a) RD curves

(b) VD curves

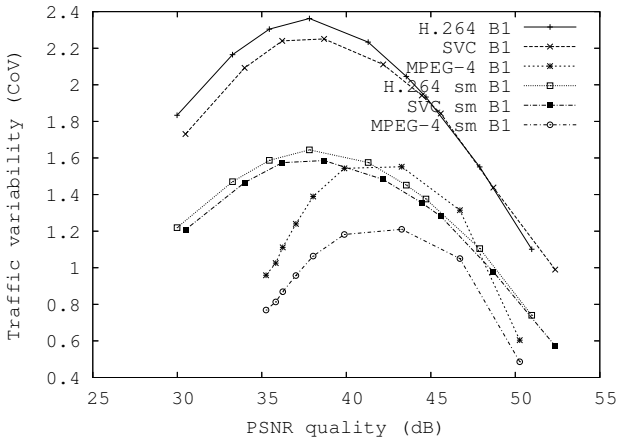
Fig. 29. RD and VD curves comparing GoP structures *G16 B1, B3, B7, B15* for CIF *NBC 12 News* sequence, encoded with H.264 SVC.

APPENDIX VII
FRAME SIZE SMOOTHING

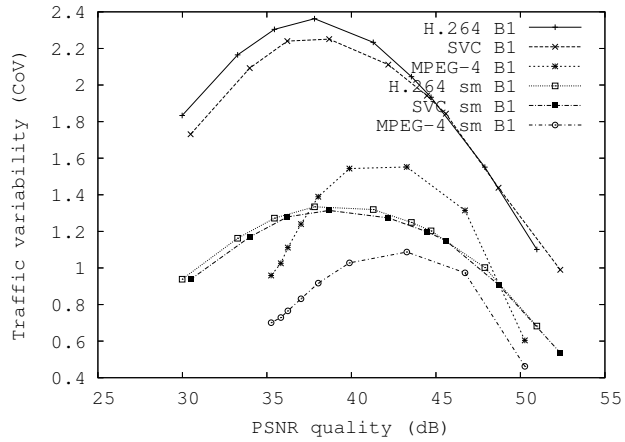
In this appendix, we provide RD and VD curves comparing H.264/AVC, H.264 SVC and MPEG–4 Part 2 encodings in each graph. The VD graphs also compare unsmoothed and smoothed traffic variabilities.



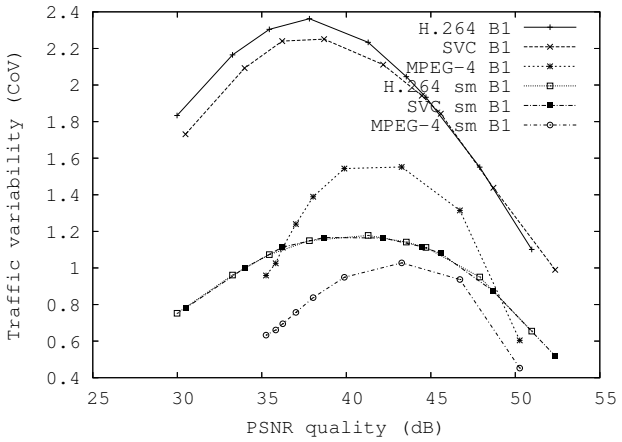
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

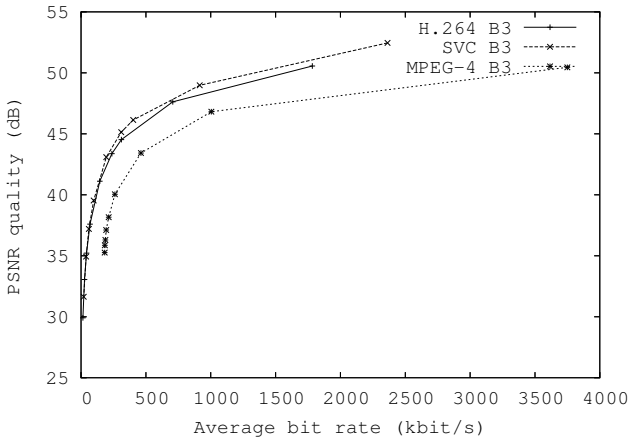


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

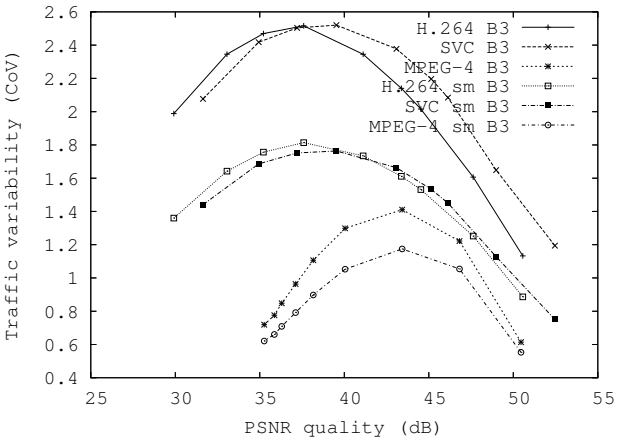


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

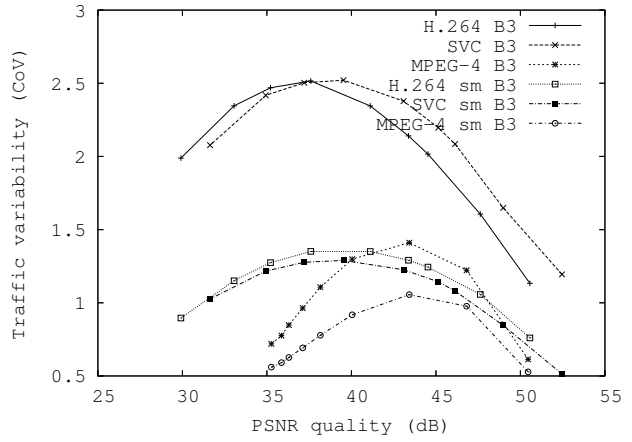
Fig. 30. RD and VD curves for CIF *Silence of the Lambs* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B1*.



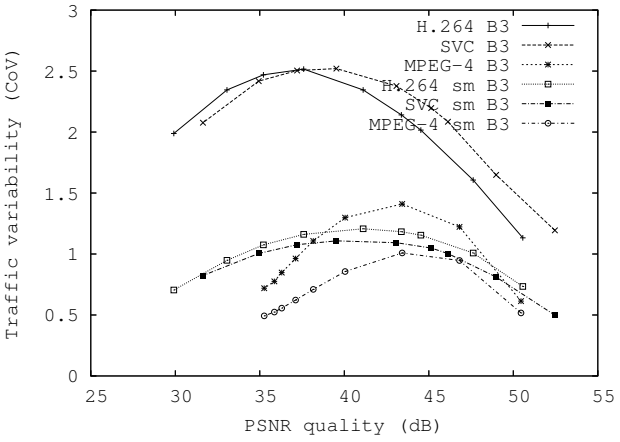
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

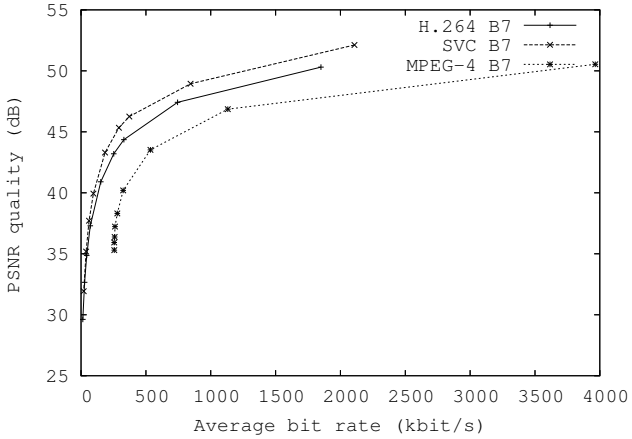


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

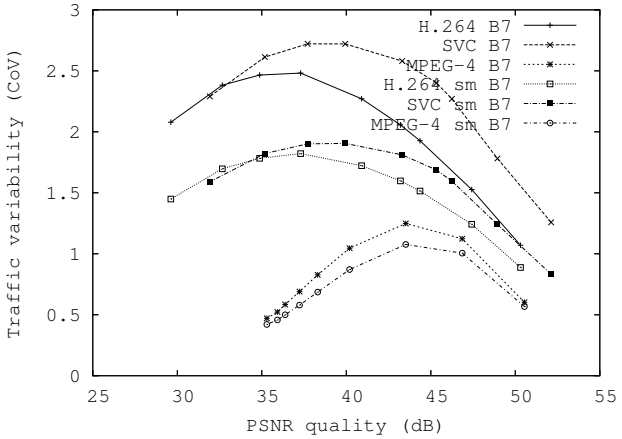


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

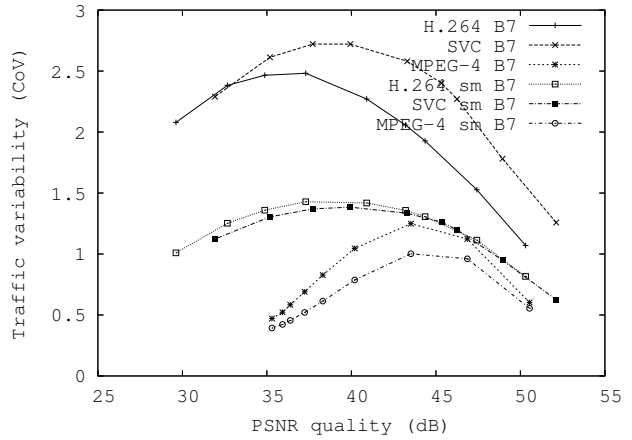
Fig. 31. RD and VD curves for CIF *Silence of the Lambs* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B3*.



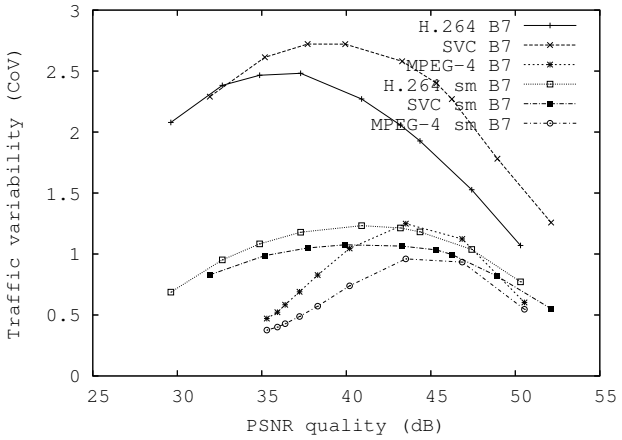
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

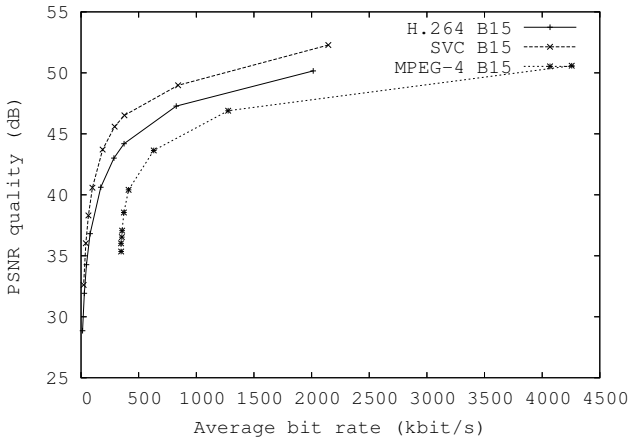


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

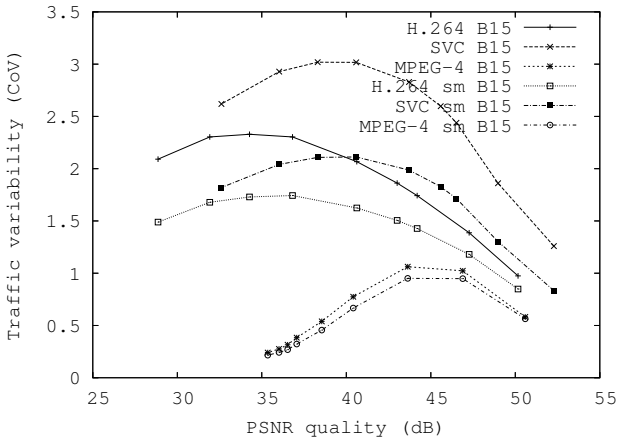


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

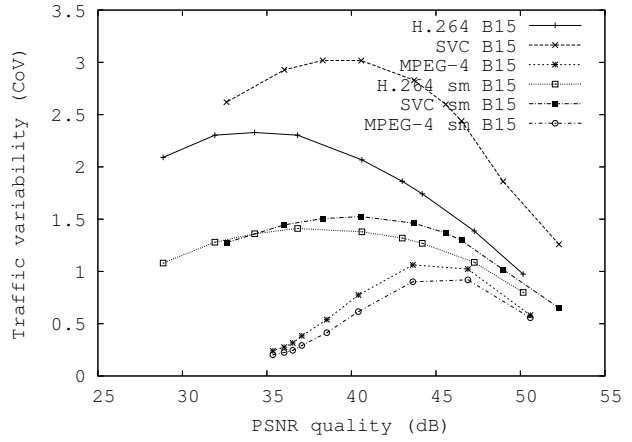
Fig. 32. RD and VD curves for CIF *Silence of the Lambs* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B7*.



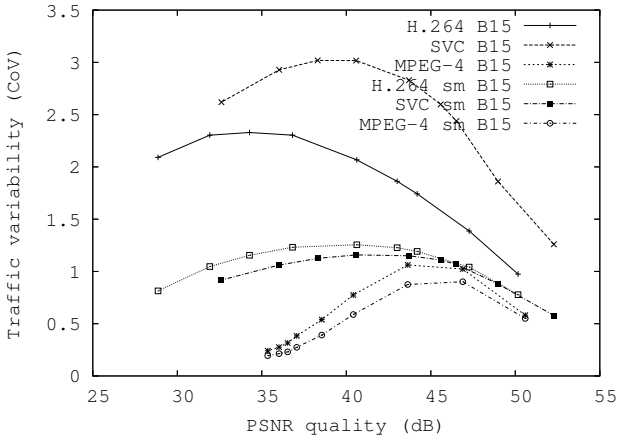
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

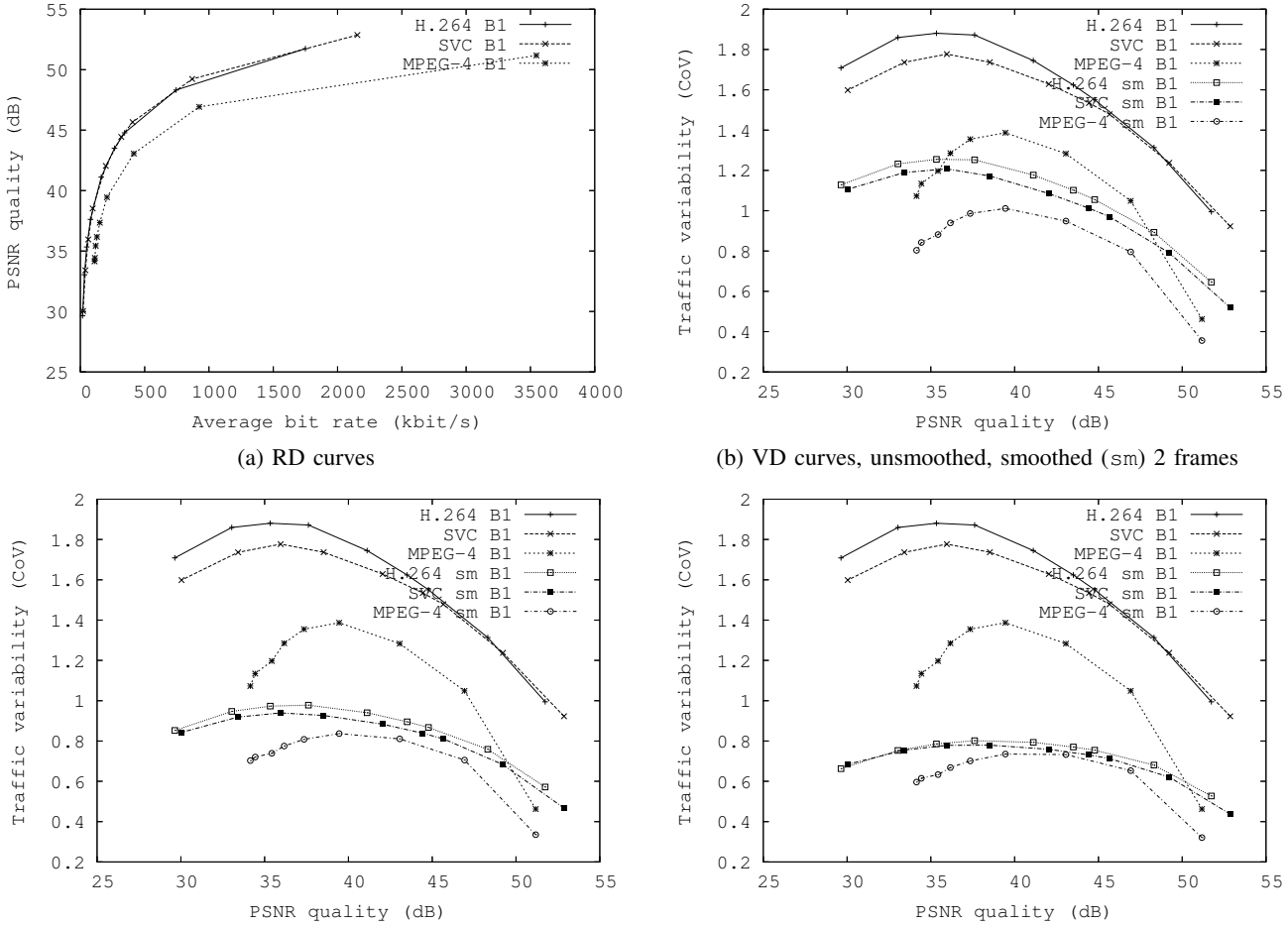


(c) VD curves, unsmoothed, smoothed (sm) 4 frames



(d) VD curves, unsmoothed, smoothed (sm) 8 frames

Fig. 33. RD and VD curves for CIF *Silence of the Lambs* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B15*.



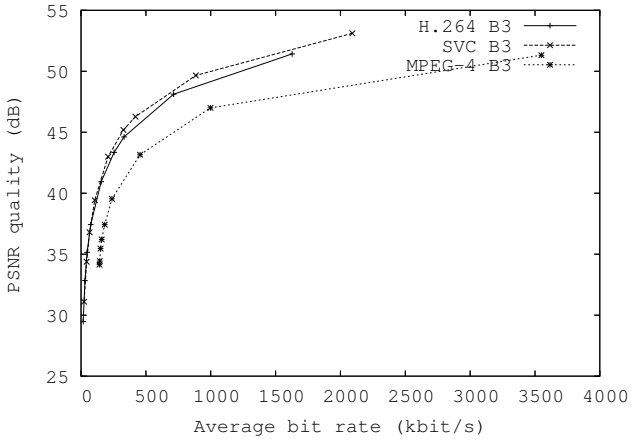
(a) RD curves

(b) VD curves, unsmoothed, smoothed (sm) 2 frames

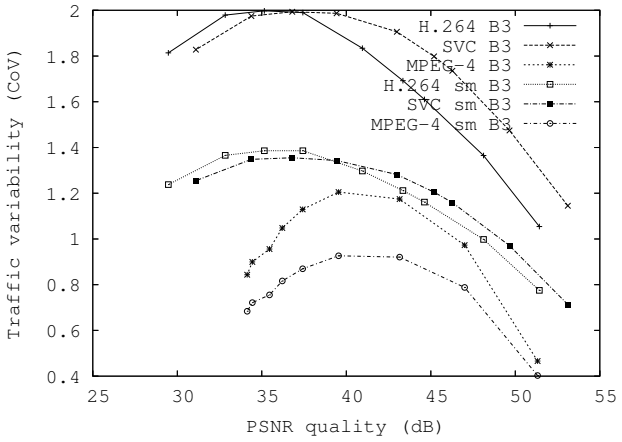
(c) VD curves, unsmoothed, smoothed (sm) 4 frames

(d) VD curves, unsmoothed, smoothed (sm) 8 frames

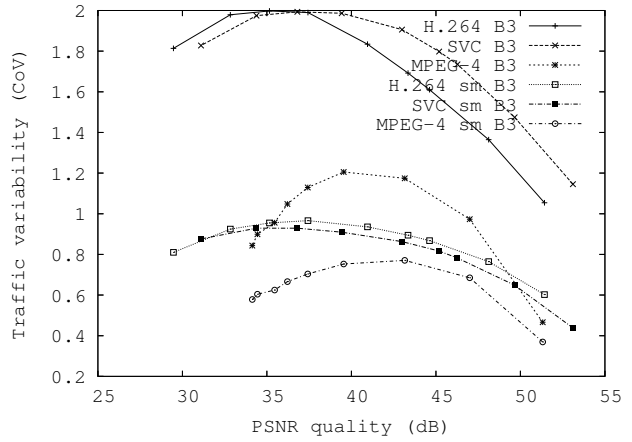
Fig. 34. RD and VD curves for CIF *Star Wars IV* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B1*.



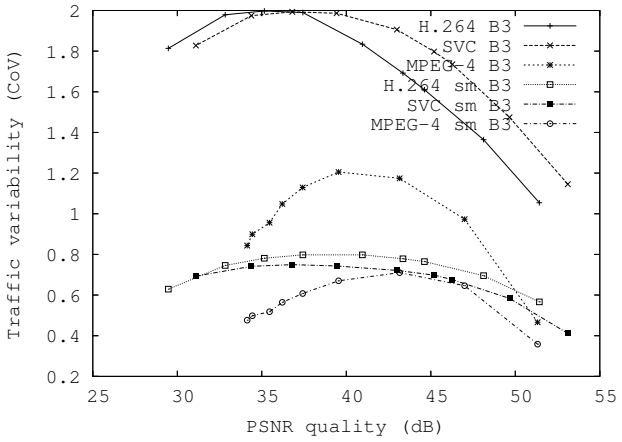
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

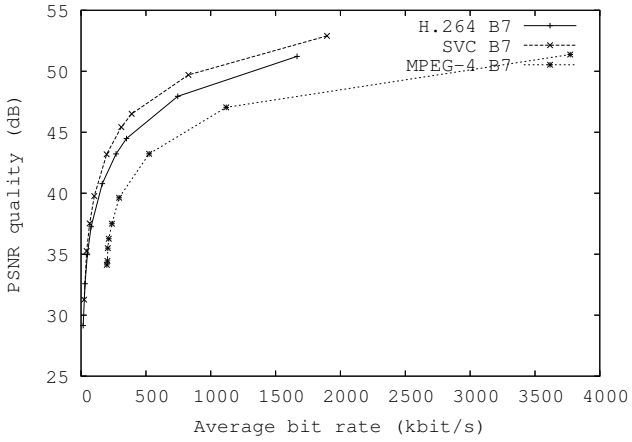


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

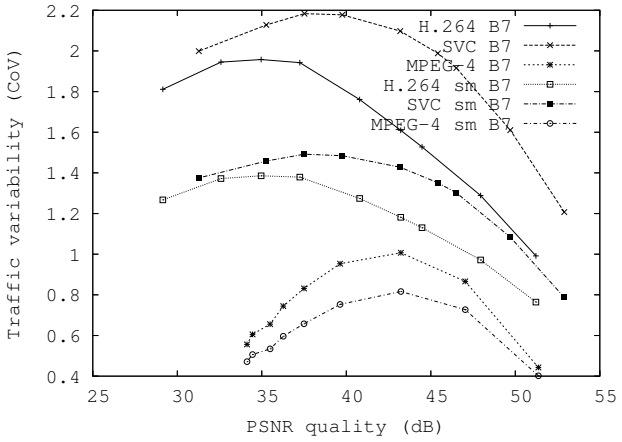


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

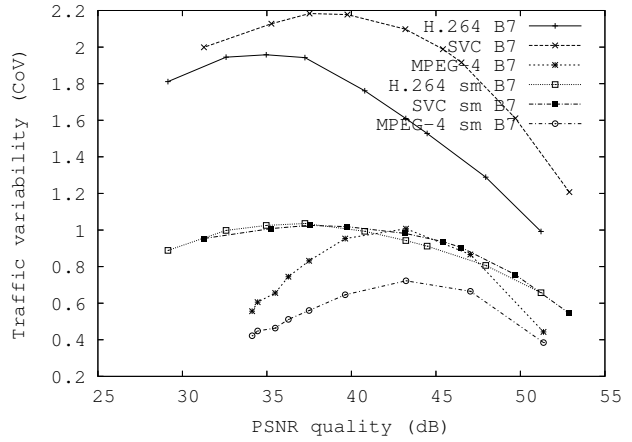
Fig. 35. RD and VD curves for CIF *Star Wars IV* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B3*.



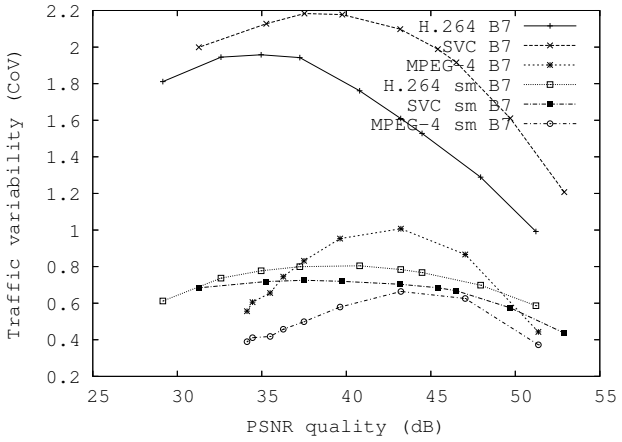
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

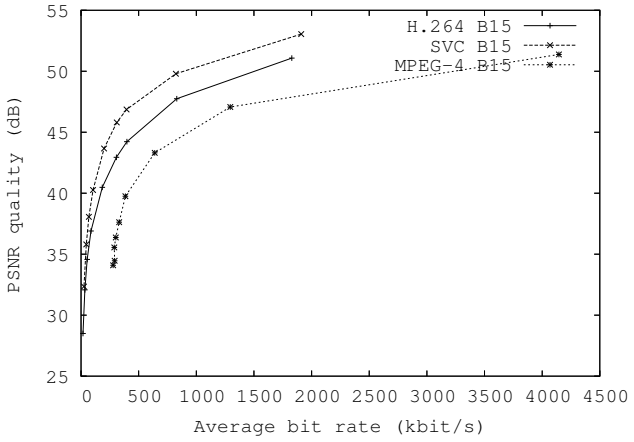


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

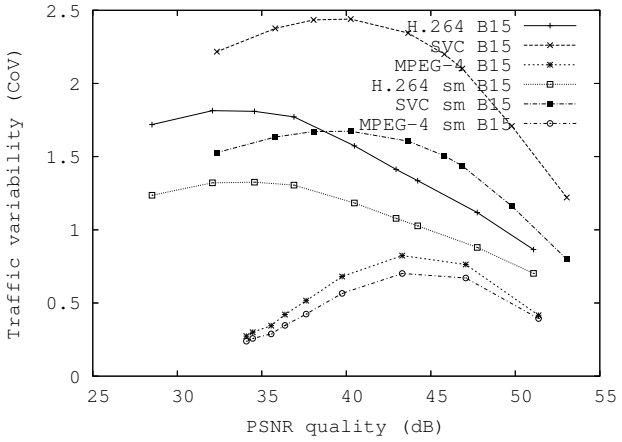


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

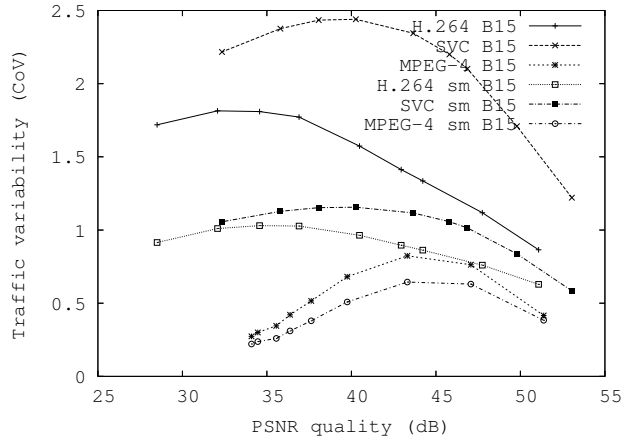
Fig. 36. RD and VD curves for CIF *Star Wars IV* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B7*.



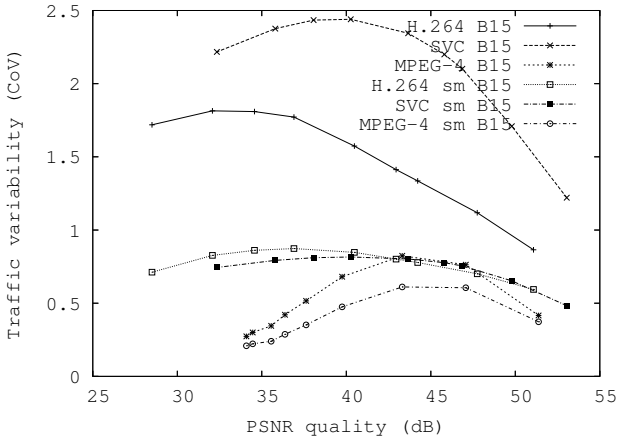
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

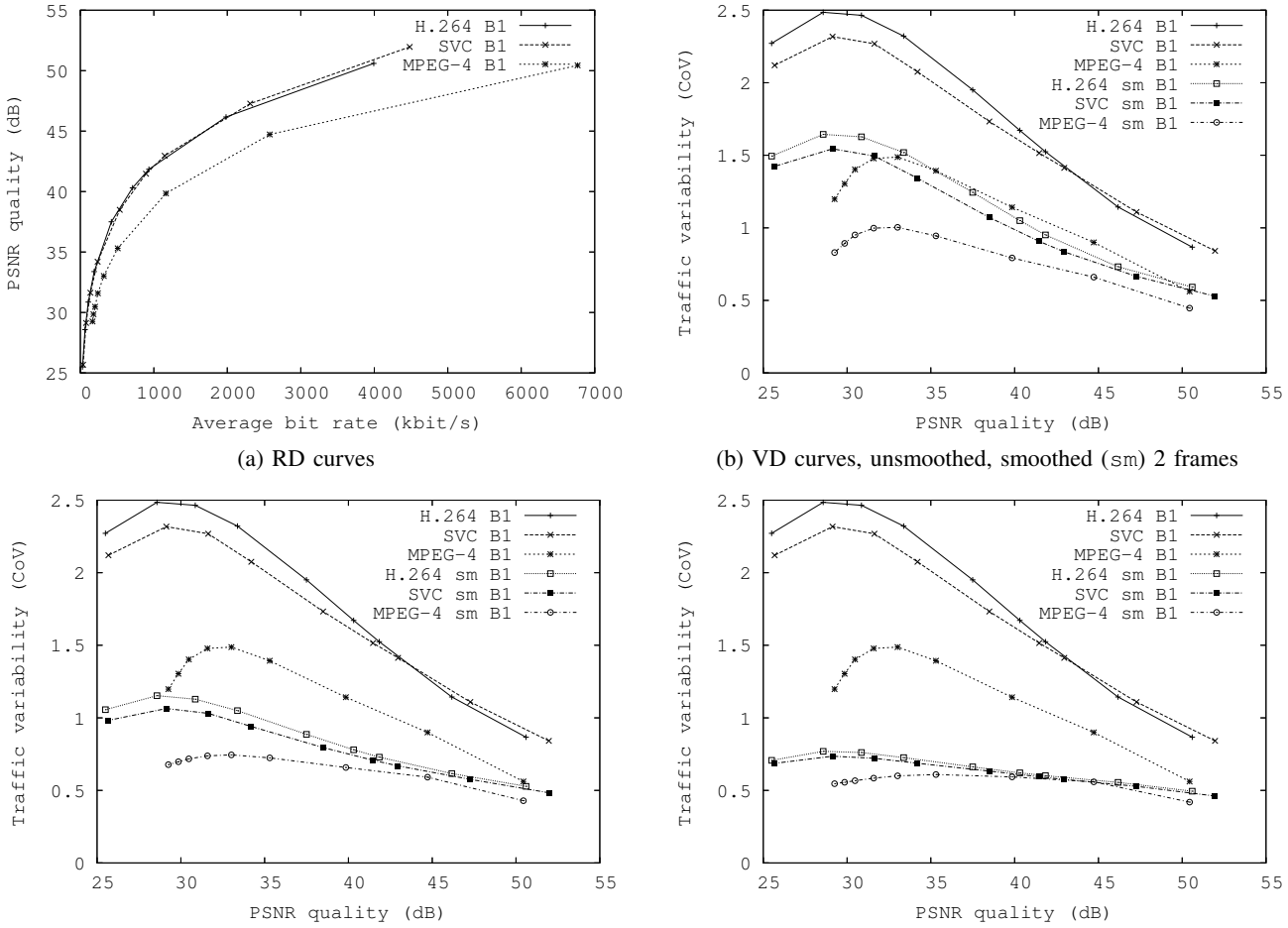


(c) VD curves, unsmoothed, smoothed (sm) 4 frames



(d) VD curves, unsmoothed, smoothed (sm) 8 frames

Fig. 37. RD and VD curves for CIF *Star Wars IV* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B15*.



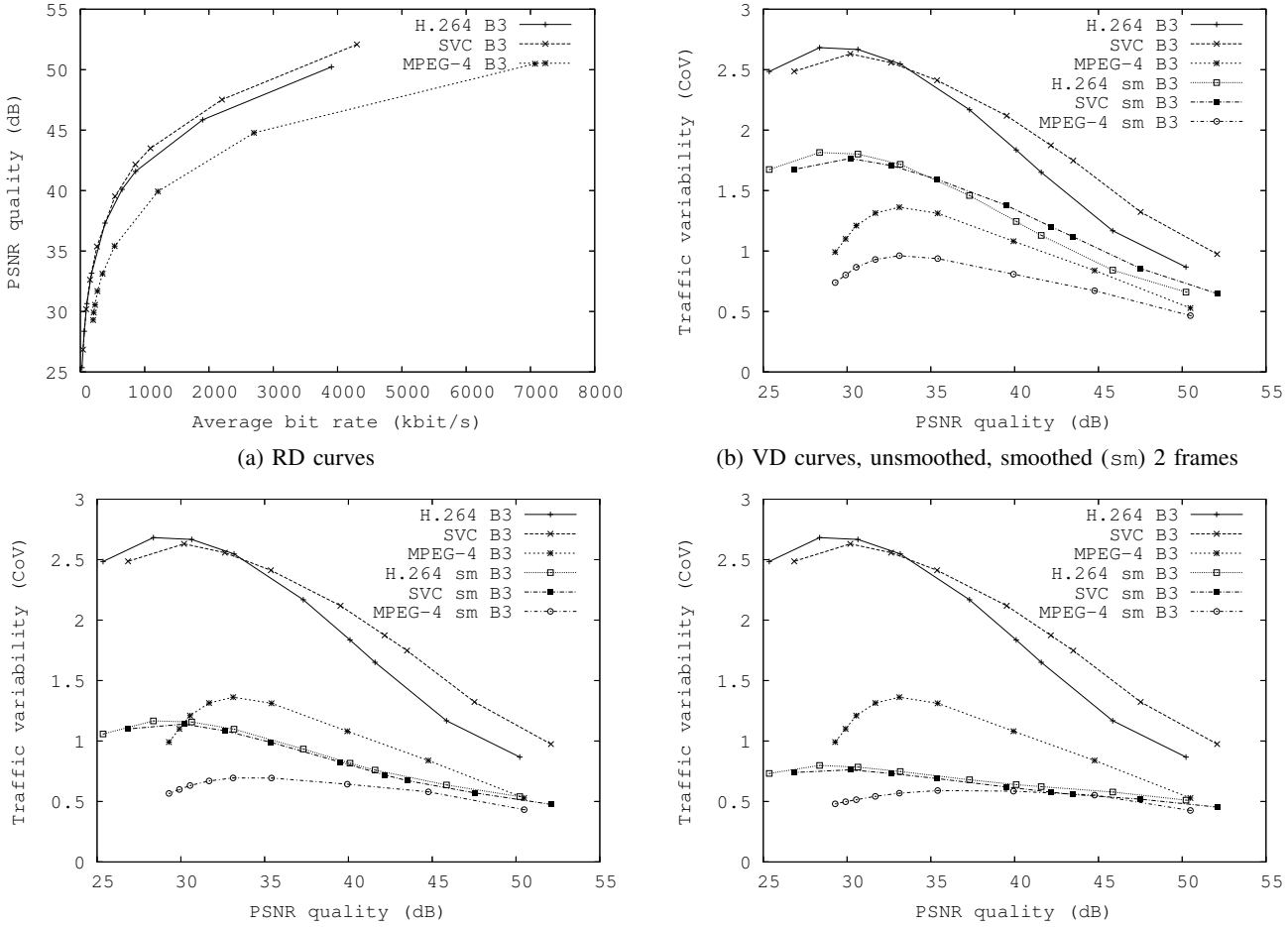
(a) RD curves

(b) VD curves, unsmoothed, smoothed (sm) 2 frames

(c) VD curves, unsmoothed, smoothed (sm) 4 frames

(d) VD curves, unsmoothed, smoothed (sm) 8 frames

Fig. 38. RD and VD curves for CIF *Sony Demo* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B1*.



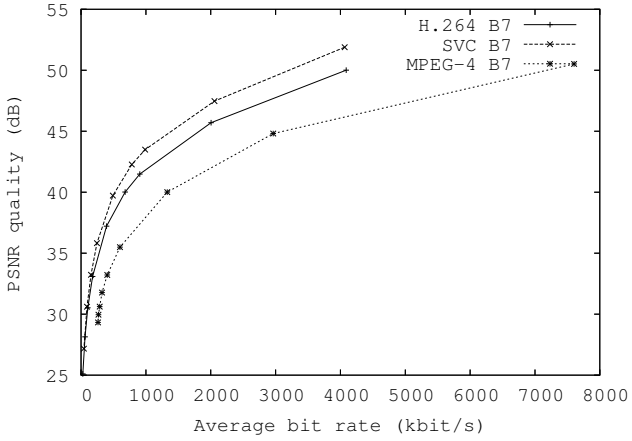
(a) RD curves

(b) VD curves, unsmoothed, smoothed (sm) 2 frames

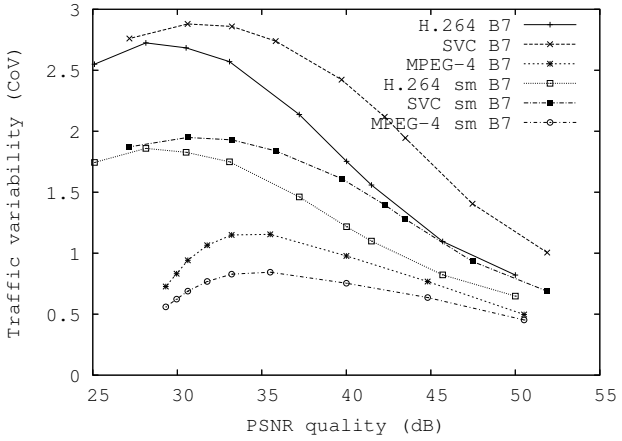
(c) VD curves, unsmoothed, smoothed (sm) 4 frames

(d) VD curves, unsmoothed, smoothed (sm) 8 frames

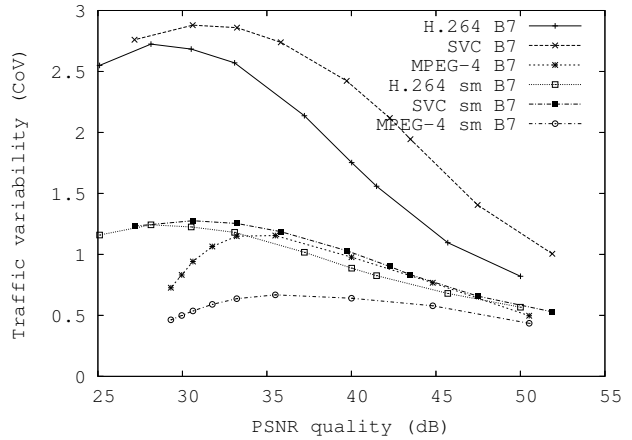
Fig. 39. RD and VD curves for CIF *Sony Demo* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B3*.



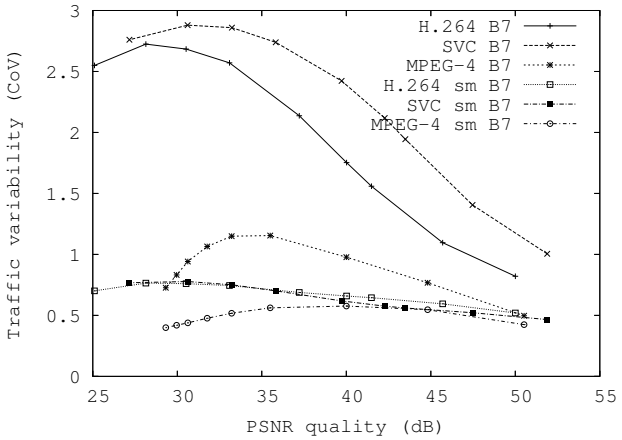
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

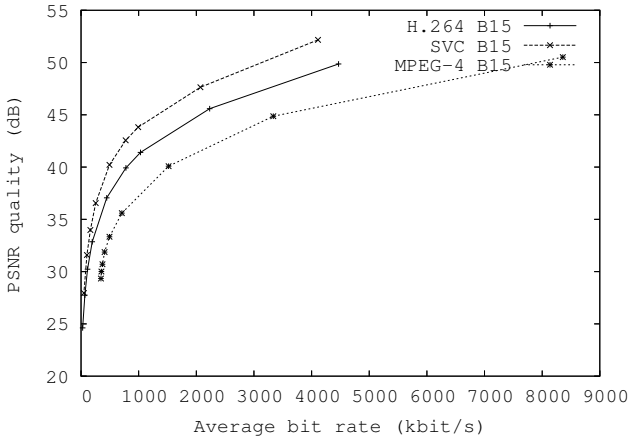


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

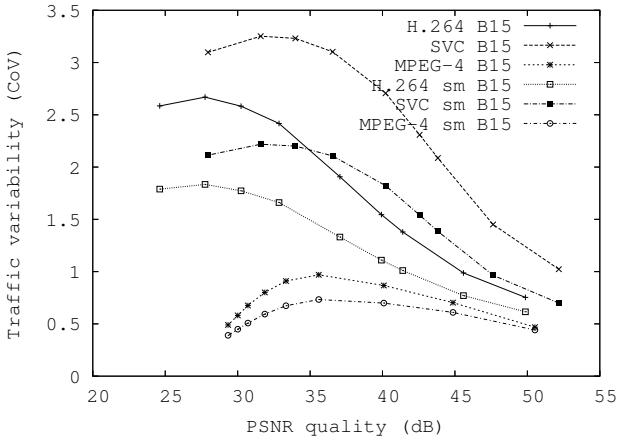


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

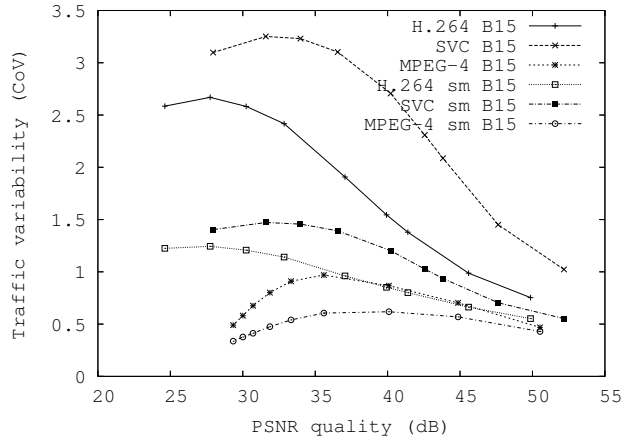
Fig. 40. RD and VD curves for CIF *Sony Demo* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B7*.



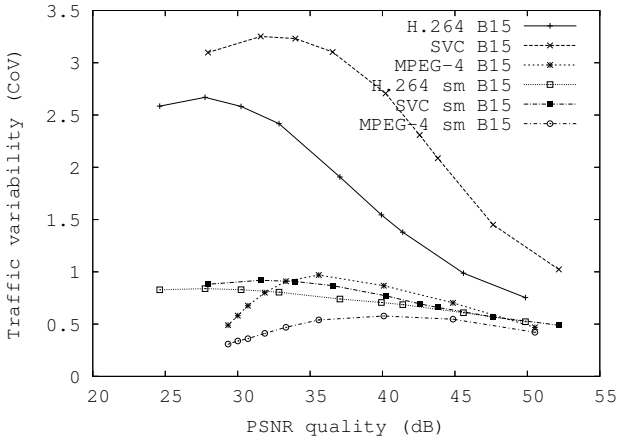
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

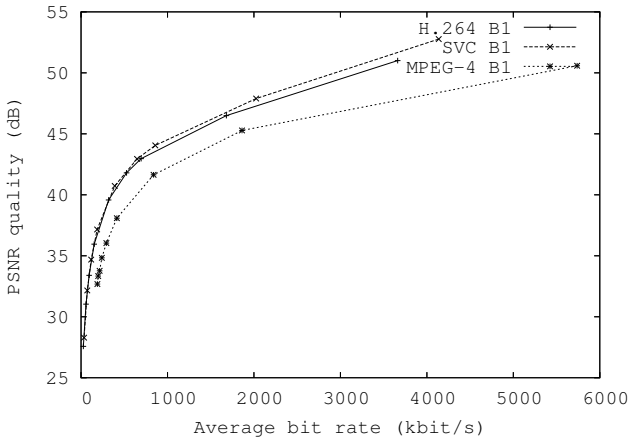


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

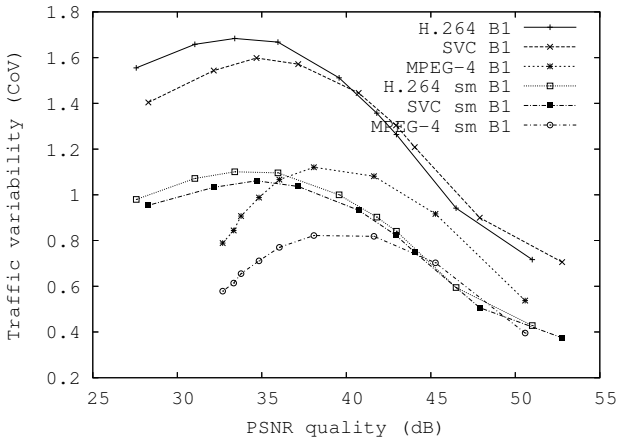


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

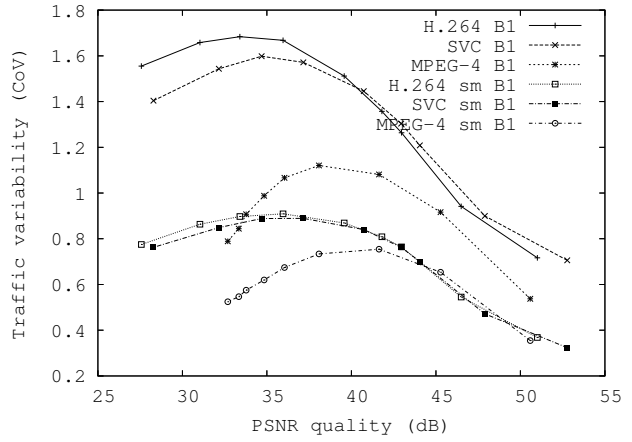
Fig. 41. RD and VD curves for CIF *Sony Demo* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B15*.



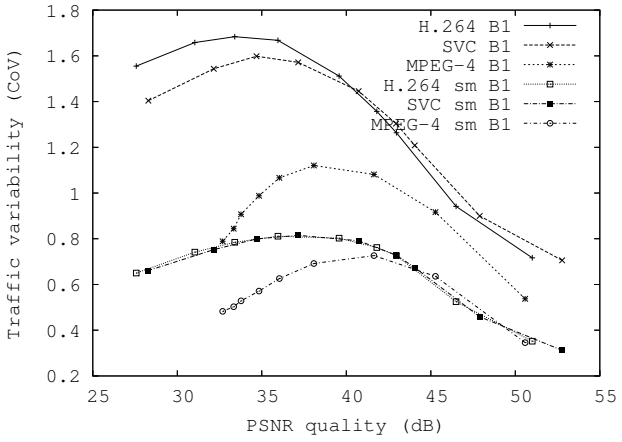
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

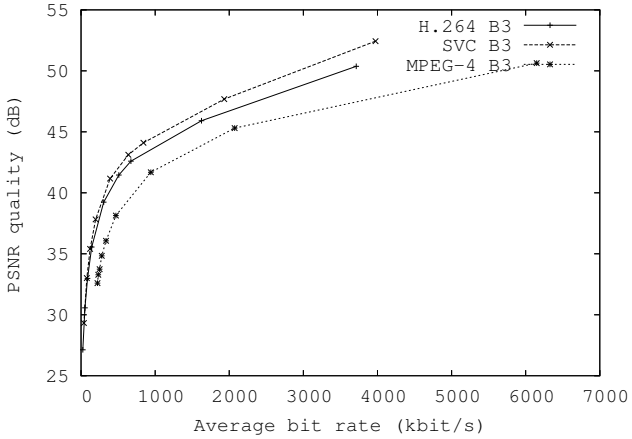


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

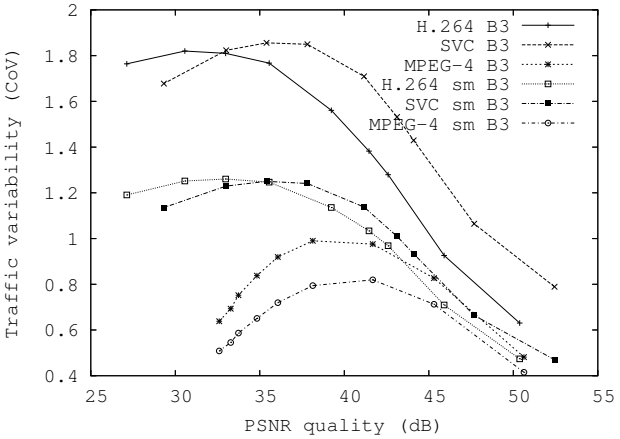


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

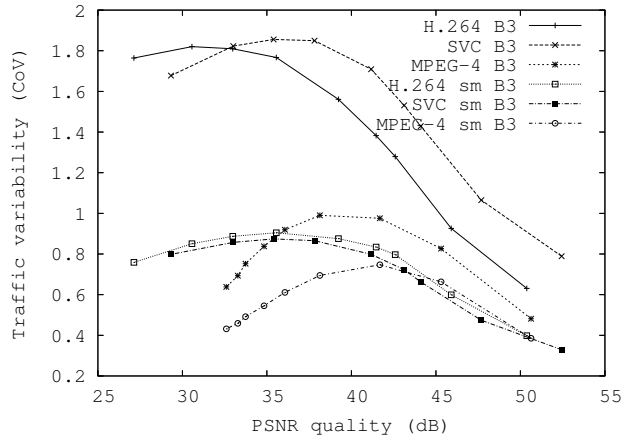
Fig. 42. RD and VD curves for CIF *Tokyo Olympics* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B1*.



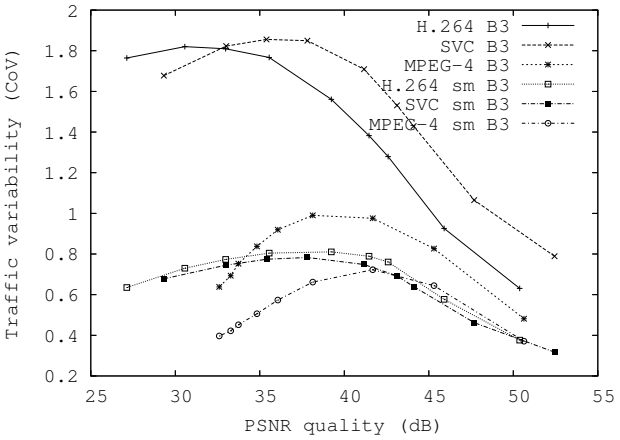
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

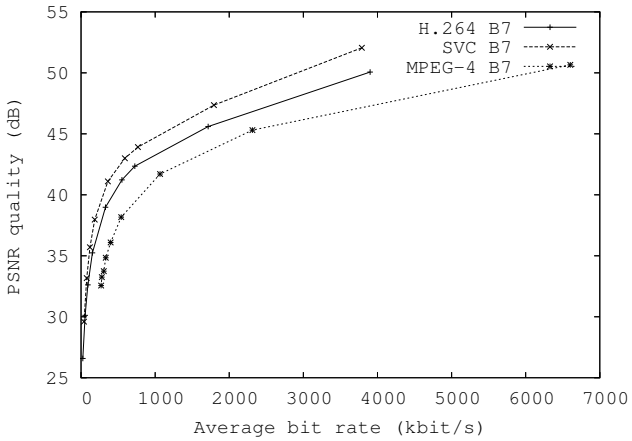


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

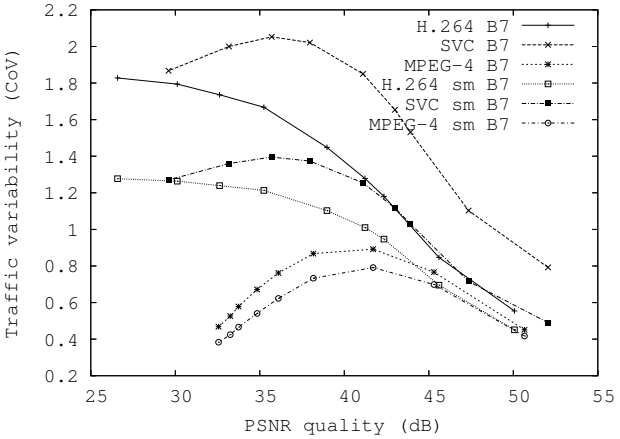


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

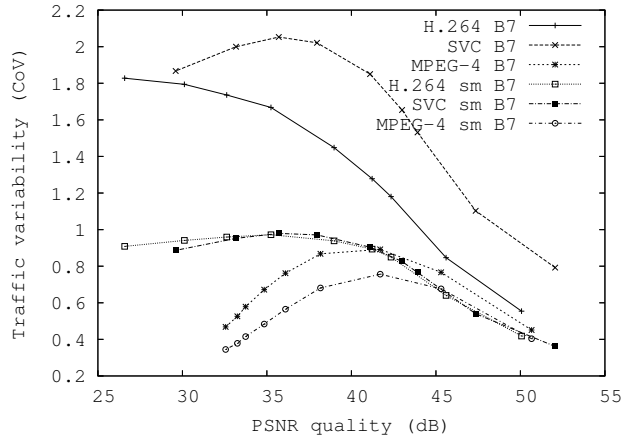
Fig. 43. RD and VD curves for CIF *Tokyo Olympics* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B3*.



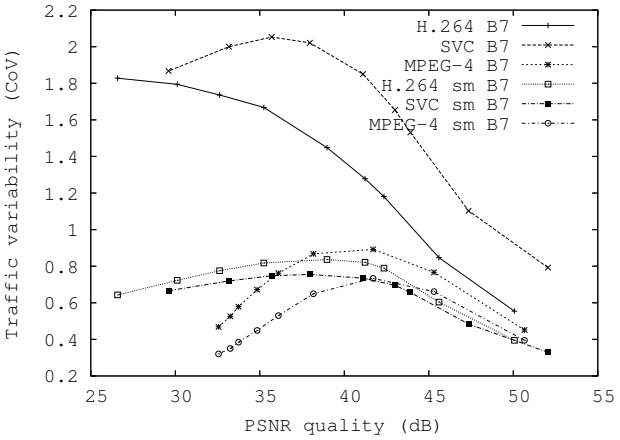
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

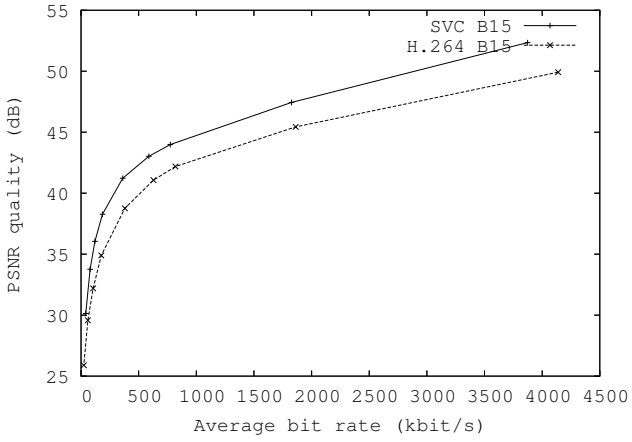


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

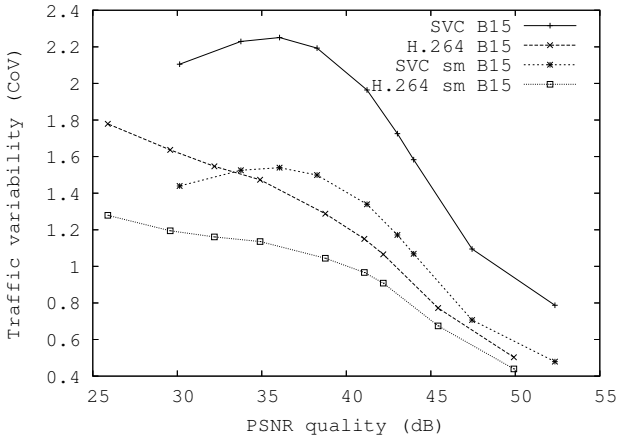


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

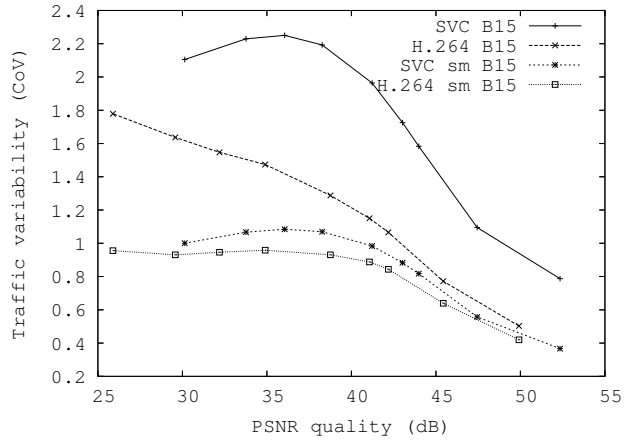
Fig. 44. RD and VD curves for CIF *Tokyo Olympics* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B7*.



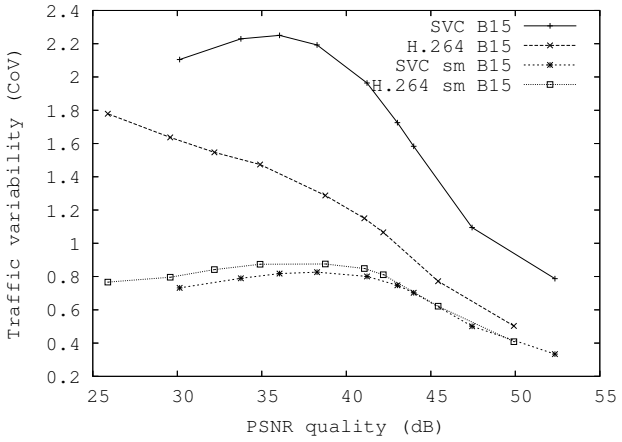
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

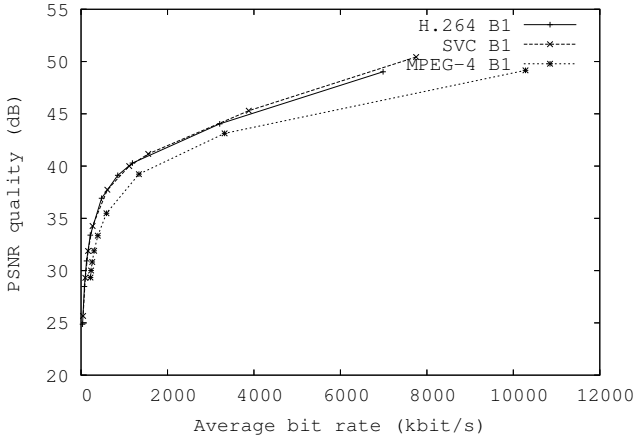


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

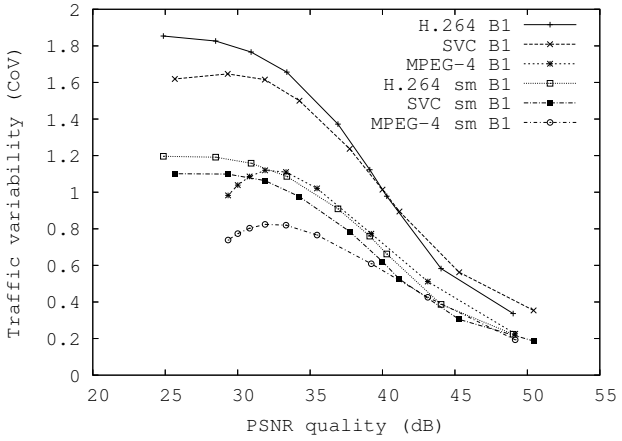


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

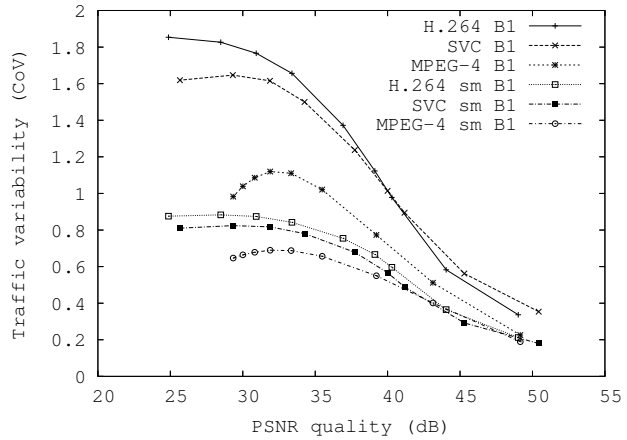
Fig. 45. RD and VD curves for CIF *Tokyo Olympics* sequence, encoded with H.264/AVC and H.264 SVC, using GoP structure *G16-B15*.



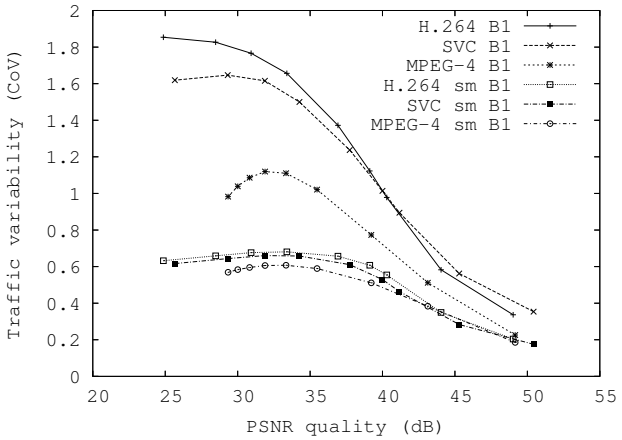
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

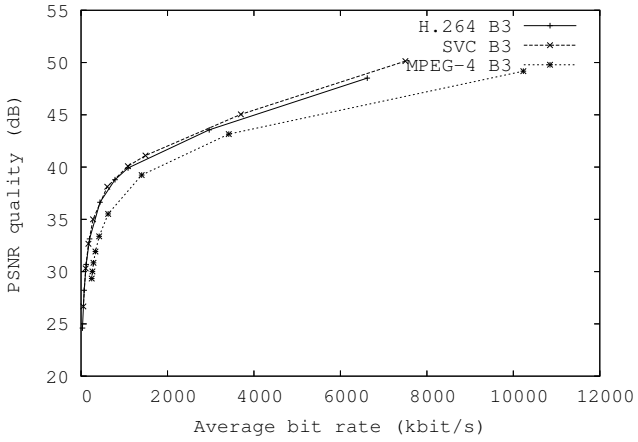


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

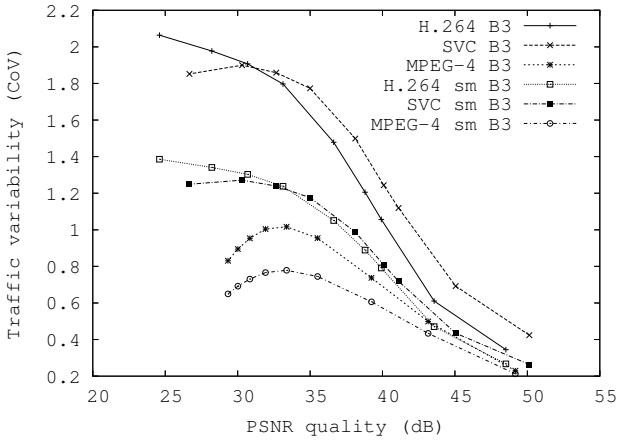


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

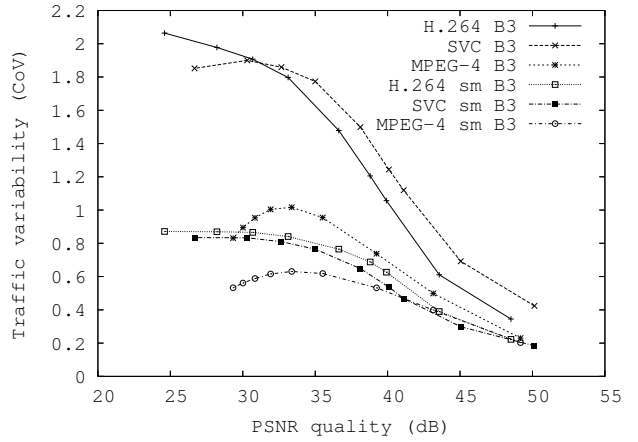
Fig. 46. RD and VD curves for CIF *NBC 12 News* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B1*.



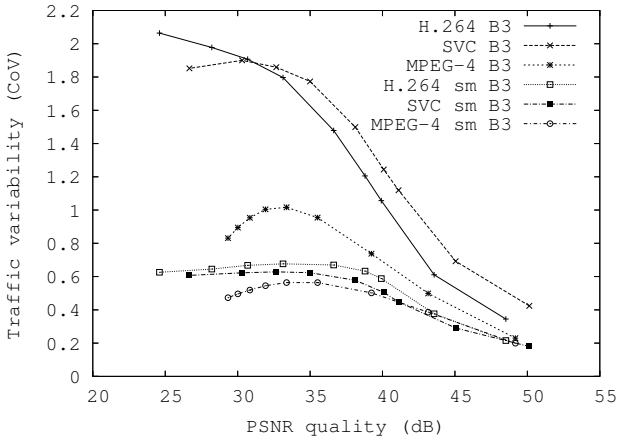
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

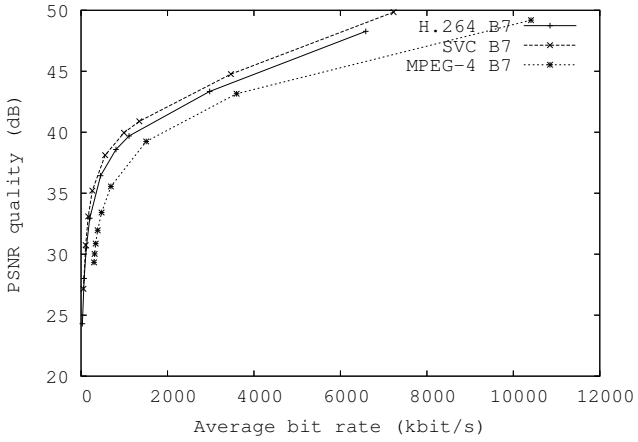


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

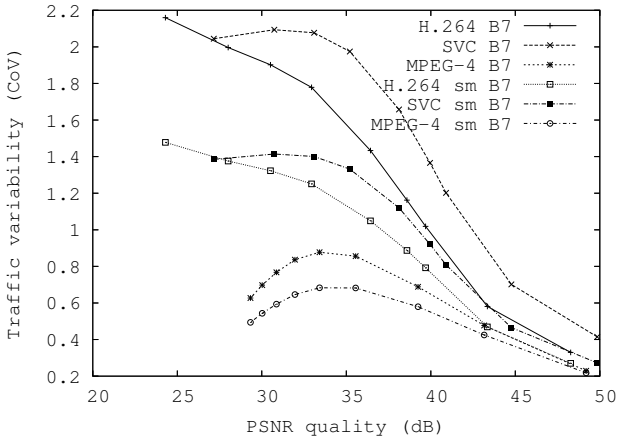


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

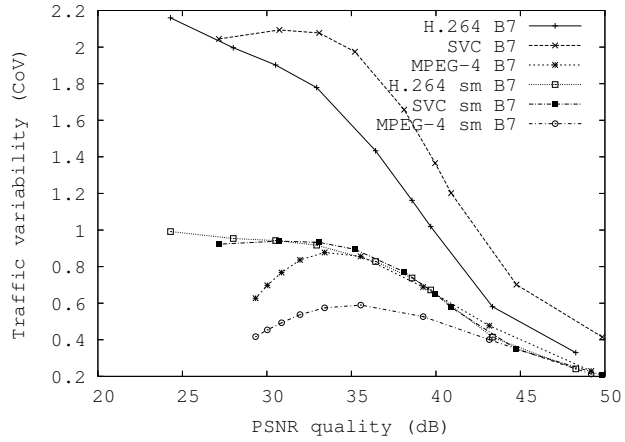
Fig. 47. RD and VD curves for CIF *NBC 12 News* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B3*.



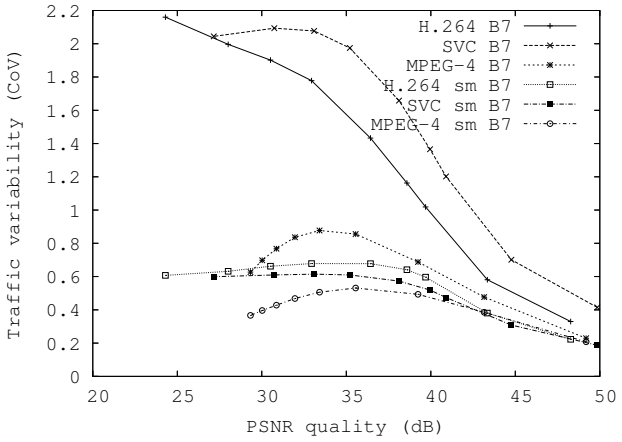
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames

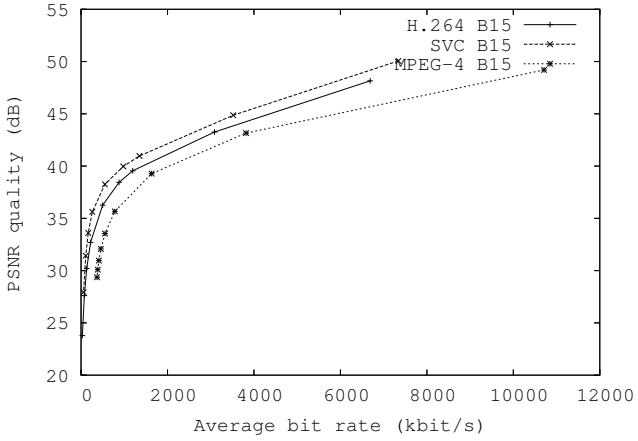


(c) VD curves, unsmoothed, smoothed (sm) 4 frames

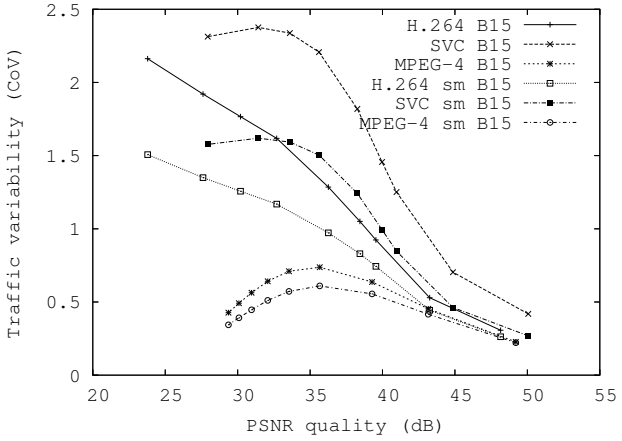


(d) VD curves, unsmoothed, smoothed (sm) 8 frames

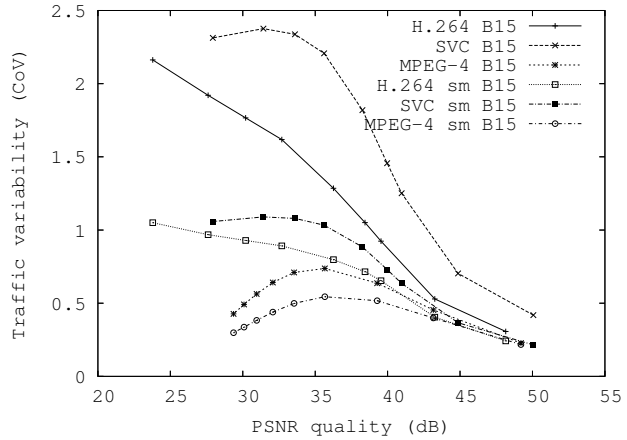
Fig. 48. RD and VD curves for CIF *NBC 12 News* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B7*.



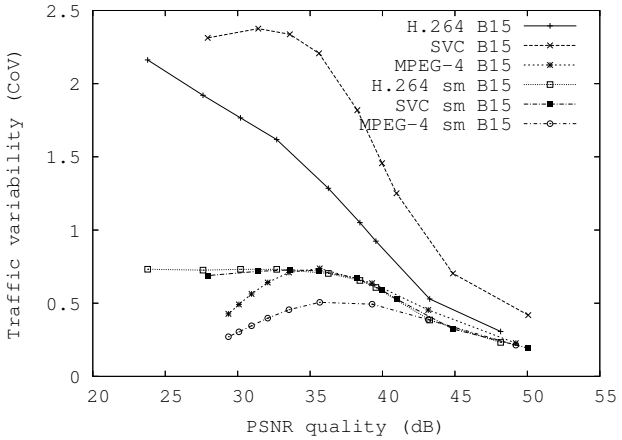
(a) RD curves



(b) VD curves, unsmoothed, smoothed (sm) 2 frames



(c) VD curves, unsmoothed, smoothed (sm) 4 frames



(d) VD curves, unsmoothed, smoothed (sm) 8 frames

Fig. 49. RD and VD curves for CIF *NBC 12 News* sequence, encoded with H.264/AVC, H.264 SVC and MPEG–4 Part 2, using GoP structure *G16-B15*.

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