

**JCT3V-E0221: CE6.h: CE results on sub-
sampling for all SDC blocks**
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Summary

- Motivation
 - ◆ Extend reference sub-sampling to all of block-sizes SDC to further reduce computing complexity
- Experimental results
 - ◆ Sub-sampling for SDC: 0.0% / 0.0% for CTC, 0.0% / 0.0% for All-intra on video / synthesized view
- Cross-checker: LGE

Reference sub-sampling in current and proposed designs

- Current reference sub-sampling design
 - ◆ 2:1 sub-sampling is used at 32x32 and 64x64 blocks in SDC
- Proposed reference sub-sampling design
 - ◆ Apply 2:1 sub-sampling to all of block-sizes in SDC
- Encoder optimization
 - ◆ DC value for the original samples is calculated without sub-sampling

Experimental results

- Reference sample sub-sampling for SDC (CTC)

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time	ren time
Balloons	0.0%	-0.1%	-0.1%	-0.03%	-0.03%	-0.07%	100.0%	95.2%	97.8%
Kendo	0.0%	0.0%	-0.1%	0.00%	0.04%	0.08%	99.6%	103.9%	102.4%
Newspaper_CC	0.0%	-0.1%	-0.2%	-0.05%	-0.08%	-0.22%	99.8%	97.9%	100.1%
GT_Fly	0.0%	0.1%	0.0%	0.01%	-0.02%	-0.04%	99.9%	100.3%	100.5%
Poznan_Hall2	0.0%	0.1%	0.4%	0.09%	0.10%	0.10%	100.1%	101.3%	101.2%
Poznan_Street	0.0%	-0.1%	0.1%	-0.01%	-0.02%	-0.02%	99.8%	101.1%	98.7%
Undo_Dancer	0.0%	0.1%	0.3%	0.05%	0.03%	0.08%	100.2%	97.7%	98.5%
1024x768	0.0%	0.0%	-0.1%	-0.03%	-0.02%	-0.07%	99.8%	99.0%	100.1%
1920x1088	0.0%	0.0%	0.2%	0.03%	0.02%	0.03%	100.0%	100.1%	99.7%
average	0.0%	0.0%	0.1%	0.01%	0.00%	-0.01%	99.9%	99.6%	99.9%

Experimental results (2)

- Reference sample sub-sampling for SDC (AI)

	video 0	video 1	video 2	video PSNR / video bitrate	video PSNR / total bitrate	synth PSNR / total bitrate	enc time	dec time	ren time
Balloons	0.0%	0.0%	0.0%	0.00%	-0.02%	0.02%	100.0%	95.0%	96.6%
Kendo	0.0%	0.0%	0.0%	0.00%	-0.01%	-0.02%	99.2%	93.1%	94.0%
Newspaper_CC	0.0%	0.0%	0.0%	0.00%	-0.02%	0.00%	99.8%	100.9%	98.2%
GT_Fly	0.0%	0.0%	0.0%	0.00%	-0.02%	0.01%	100.4%	106.2%	105.5%
Poznan_Hall2	0.0%	0.0%	0.0%	0.00%	-0.01%	-0.02%	99.7%	101.6%	101.4%
Poznan_Street	0.0%	0.0%	0.0%	0.00%	-0.01%	-0.01%	100.2%	105.1%	107.3%
Undo_Dancer	0.0%	0.0%	0.0%	0.00%	-0.01%	0.01%	99.9%	100.9%	102.4%
1024x768	0.0%	0.0%	0.0%	0.00%	-0.02%	0.00%	99.7%	96.3%	96.3%
1920x1088	0.0%	0.0%	0.0%	0.00%	-0.01%	0.00%	100.1%	103.5%	104.1%
average	0.0%	0.0%	0.0%	0.00%	-0.01%	0.00%	99.9%	100.4%	100.7%

Conclusions

- Propose to use reference sub-sampling to all of block-sizes in SDC
- The computing complexity for SDC can be further reduced
- Suggest adopting the proposed sub-sampling method



Thank you!

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