M17175 - Newspaper sequence - Results of 3DV/FTV Exploration Experiments with depths and view synthesis.

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EE 4

- JMVM 5.0.6
- GOP length was set to 16
- Targeted bitrates 0.375, 0.75, 1.25, 2 Mbps for 2 view case
- QP – Quantization index for views
- QD – Quantization index for depth maps

Quantization parameters

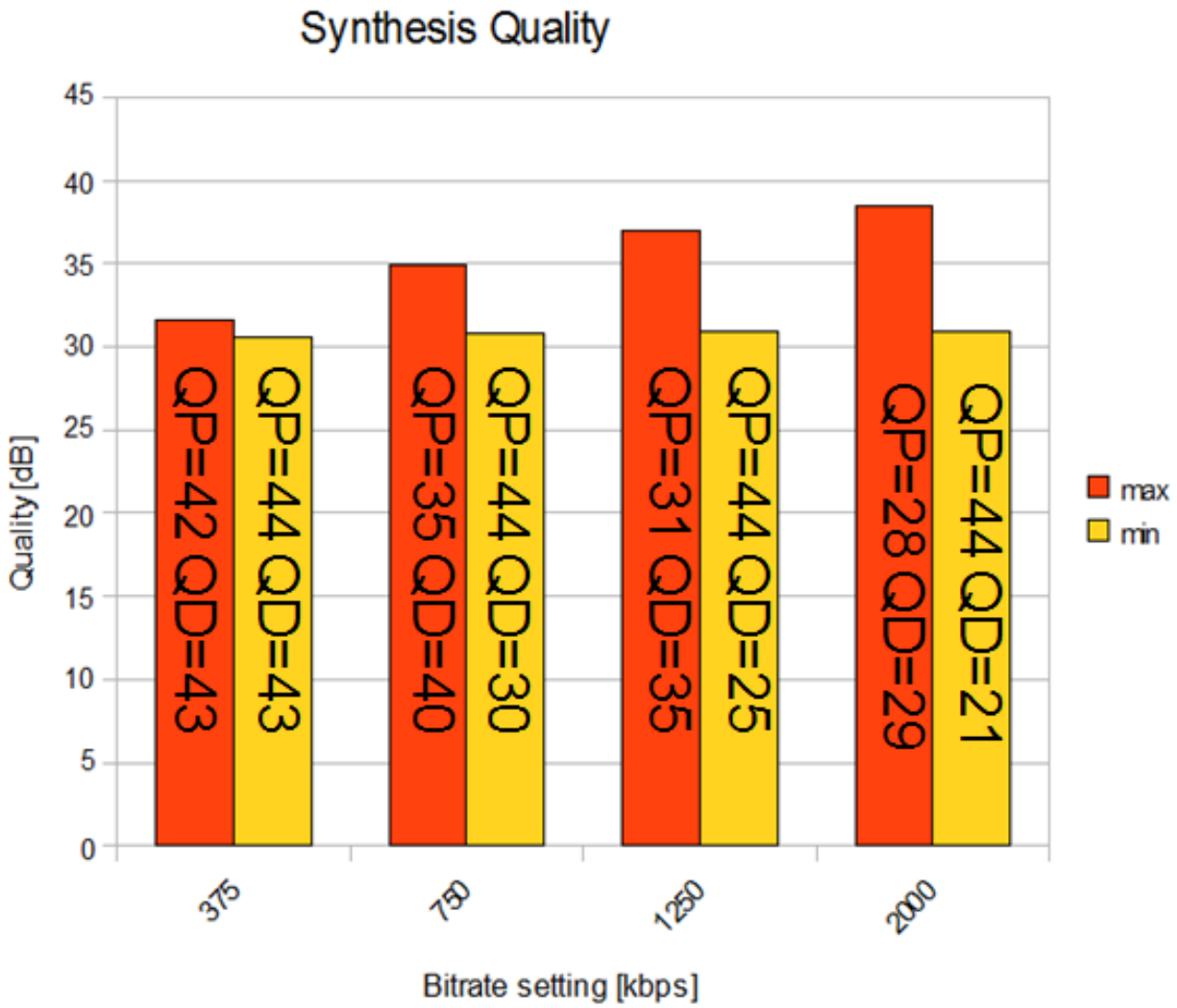
- Selected QP and QD indexes pairs which meet targeted bitrate

Bitrate	QP-QD pairs selected
375 kbps	44-43, 44-42, 43-44, 44-41, 43-43, 43-43, 42-44, 44-40, 42-43, 43-41
750 kbps	43-31, 37-36, 35-41, 38-34, 40-32, 39-33, 36-37, 35-40, 42-31, 44-30, 37-35
1.25 Mbps	40-26, 30-40, 32-32, 31-35, 30-39, 37-27, 44-25, 34-29, 30-38, 33-30
2 Mbps	44-21, 28-29, 27-32, 29-27, 26-37, 31-25, 34-23, 43-21, 32-24, 37-22, 26-36, 42-21

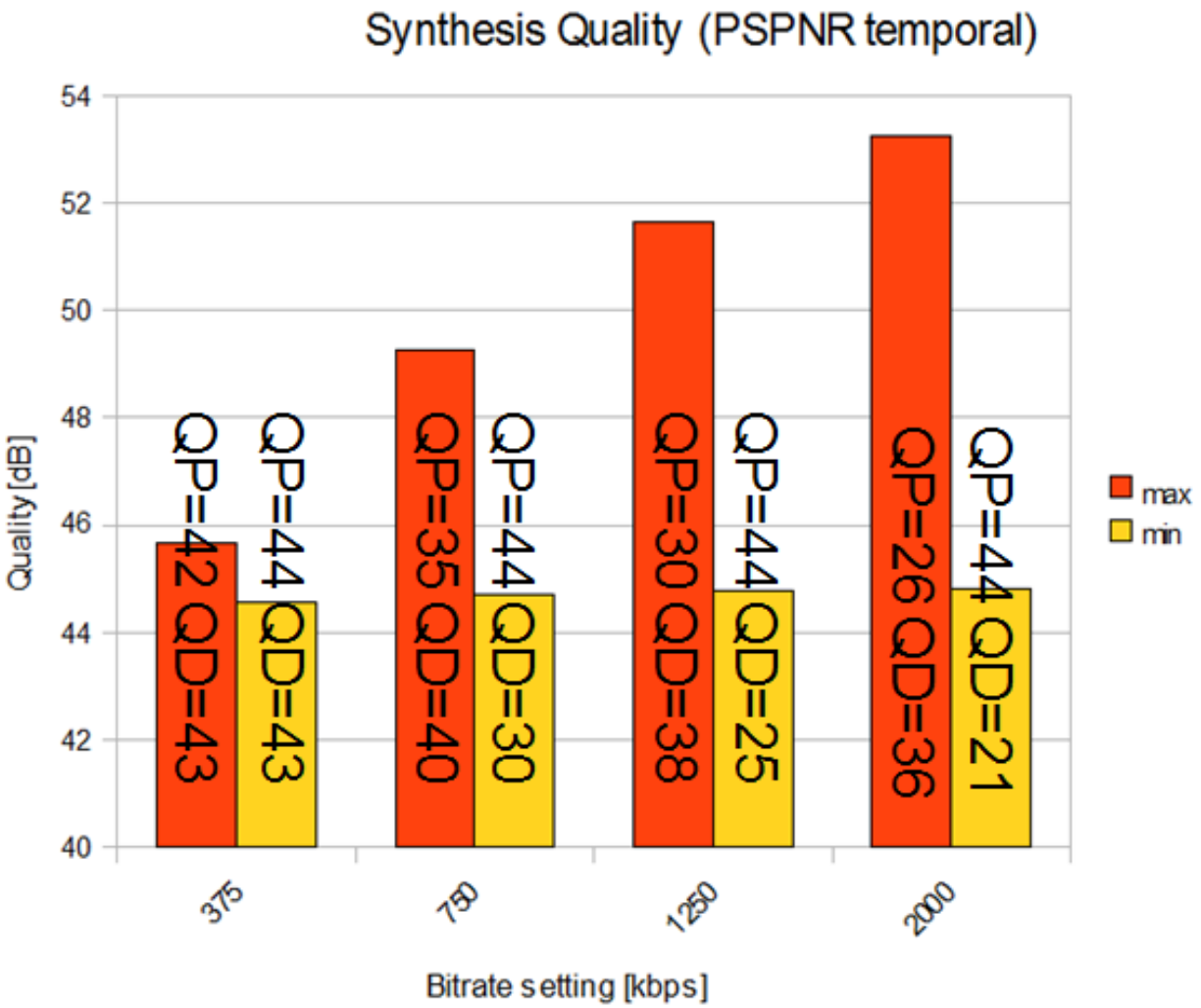
Results – 1250 kbps

Bitrate [kbps]	QP	QD	against uncompressed synthesis				against original view			
			PSNR [dB]	PSNR (pspnr) [dB]	PSPNR temporal [dB]	PSPNR spatial [dB]	PSNR [dB]	PSNR (pspnr) [dB]	PSPNR temporal [dB]	PSPNR spatial [dB]
1 236	40	26	33.09	33.24	47.04	36.51	30.59	30.71	46.43	32.80
1 236	30	40	36.22	36.61	51.51	42.08	32.38	32.64	51.82	35.75
1 242	32	32	36.45	36.73	50.95	42.24	32.35	32.55	50.73	35.50
1 246	31	35	36.63	36.94	51.35	42.61	32.46	32.67	51.33	35.71
1 256	30	39	36.37	36.75	51.62	42.25	32.44	32.69	51.87	35.78
1 267	37	27	34.67	34.86	48.67	39.10	31.44	31.59	48.07	34.06
1 268	44	25	30.72	30.87	44.78	32.88	29.12	29.24	44.22	30.70
1 270	34	29	35.90	36.12	50.16	41.22	32.04	32.20	49.69	34.97
1 275	30	38	36.53	36.91	51.64	42.55	32.49	32.74	51.86	35.87
1 277	33	30	36.27	36.52	50.64	41.89	32.25	32.43	50.25	35.31
	- the best result for given bitrate						- the worst result for given bitrate			

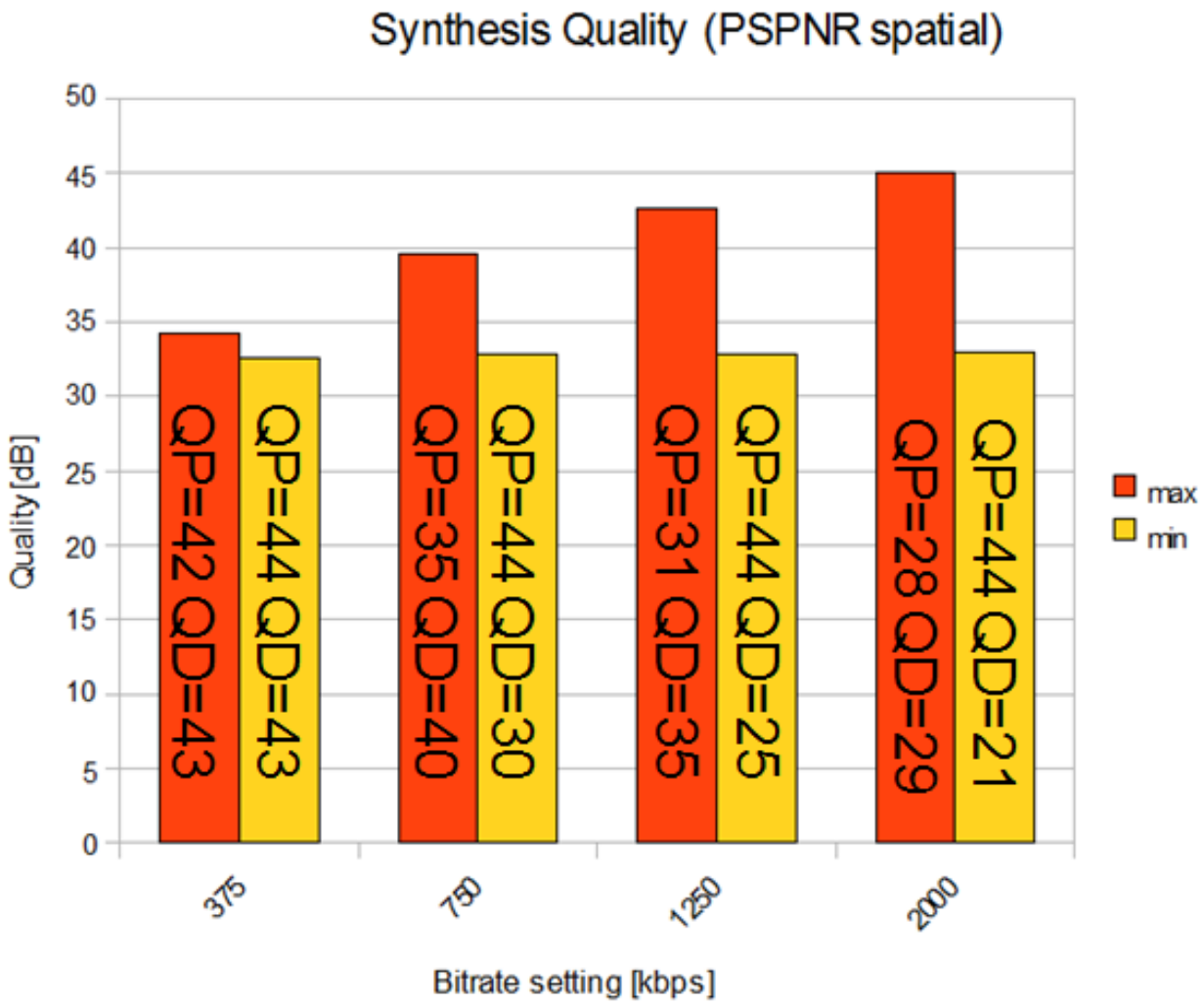
Results - PSNR



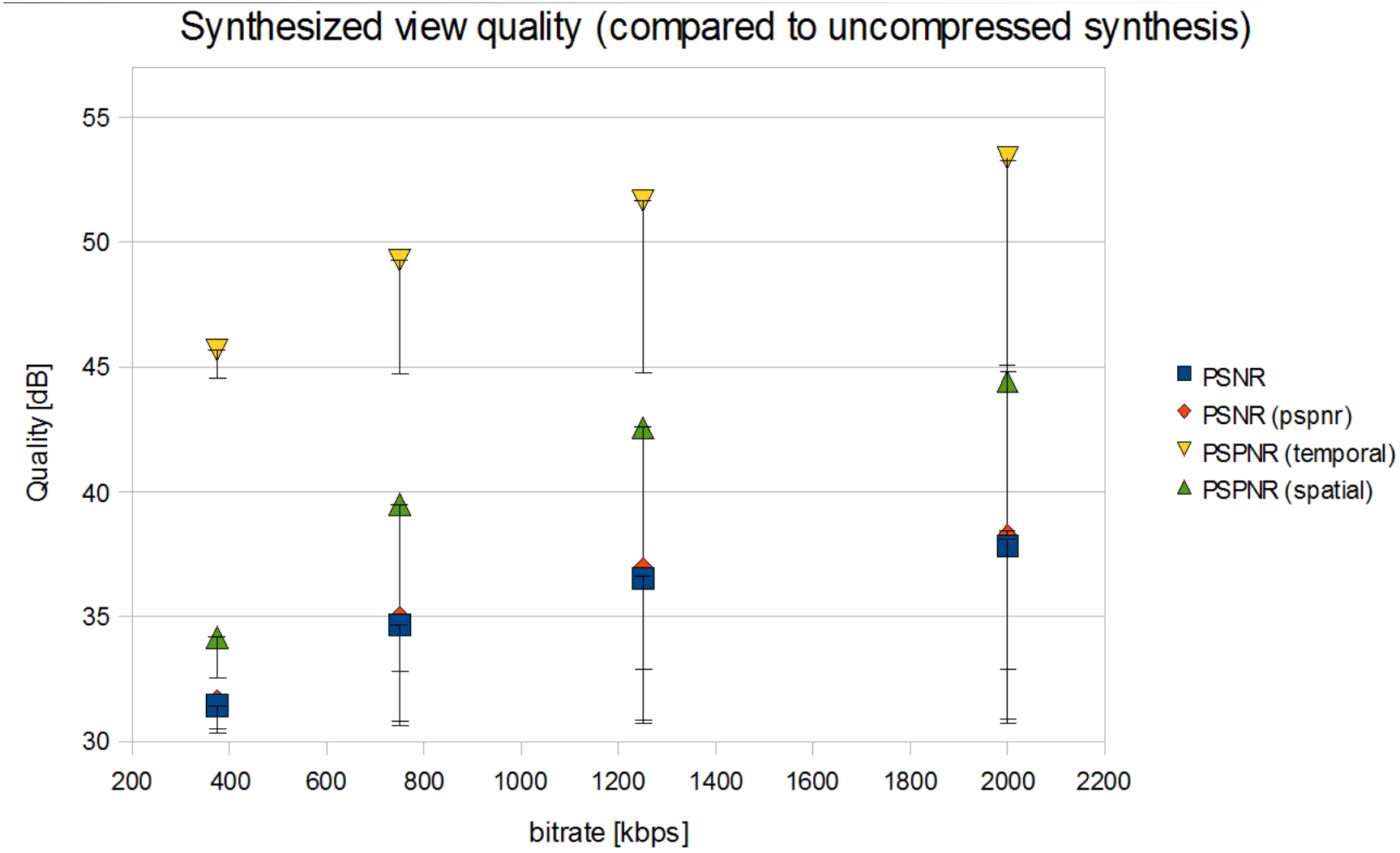
Results – PSPNR temporal



Results – PSPNR spatial



Results - summary



Summary

- Quality of synthesized view depends more on quality of compressed/decompressed image (QP parameter) than on quality of compressed/decompressed depth (QD).
- The usual approach of choosing the minimal QP does not give the best results in some cases, but the differences of quality measures are negligible.
- **Quality of synthesized views in coding experiments is almost equally distributed over quality axes for reference bitrates.**