**INTRA–ADAPTIVE MOTION–COMPENSATED LIFTED WAVELETS FOR VIDEO CODING (WedAmPO4)**

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**Abstract:**
This paper investigates intra–adaptive wavelets for video coding with frame–adaptive motion–compensated lifted wavelet transforms. With motion–compensated lifted wavelets, the temporal wavelet decomposition operates along motion trajectories. However, valid trajectories for efficient multi–scale filtering have a finite duration in time. This is due to well known effects like occlusions or inaccurate motion estimation. These discontinuities may generate many non–zero wavelet coefficients when a transform with a fixed dyadic structure is used. To investigate the advantage of an adaptive transform, we introduce intra macroblocks in the frame–adaptive lifting steps. Depending on the rate–distortion costs at a given macroblock location, we choose the number of wavelet decomposition levels locally. We discuss motion–compensated lifted wavelets that are frame– and intra–adaptive. We evaluate the efficiency of intra–adaptive wavelets when frame–adaptive motion–compensated wavelets are used. We observe that intra–adaptivity is rate–distortion efficient for discontinuities that cannot be handled by frame–adaptivity.

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