Studying Error Resilience Performance for a Feedback Channel Based Transform Domain Wyner–Ziv Video Codec

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Abstract:
Wyner–Ziv (WZ) video coding is an emerging video coding paradigm based on two major Information Theory results: the Slepian–Wolf and Wyner–Ziv theorems. One of the most interesting and used WZ video coding architectures makes use of a feedback channel (FC) to perform rate control at the decoder; in this context, the Slepian–Wolf coding module is typically based on turbo coding with puncturing. Because WZ coding is not based on the prediction loop used in conventional video coding but rather on a statistical approach where a decoder estimation of the frame to be coded is 'corrected' by the encoder, it provides intrinsic error resilience capabilities.

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Abstract : (cont.) This paper intends to study the error resilience performance of a feedback channel based transform domain WZ codec using appropriate scenarios and conditions, notably in comparison with the best performing H.264/AVC standard.