H.264 FAST INTRA−PREDICTION MODE DECISION BASED ON FREQUENCY CHARACTERISTIC (WedAmPO4)

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Abstract :

In this paper, we propose a mode decision scheme for 4x4 intra−prediction in H.264 encoder to reduce its complexity. We focus on the characteristic of each prediction mode in terms of reducing its power in DCT domain since it is considered that reducing frequency components with higher level power may improve the efficiency of prediction. The proposed method reduces the candidates of prediction modes by classifying frequency characteristics of 4x4 block, which are computed from its low−frequency components of DCT coefficients. We evaluate the proposed method in terms of PSNR, bitrate, and the encoder complexity. Experimental results show that the proposed scheme reduces the complexity by nearly 60% while keeping PSNR and bitrate equally to JM.

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