Empirical evaluation of decomposition strategy for wavelet video compression.

ABSTRACT

The wavelet transform has become the most interesting new algorithm for video compression. Yet there are many parameters within a wavelet analysis andsynthesis which govern the quality of a decoded video. In this paper different wavelet decomposition strategies and their implications for the decoded videoare discussed. A pool of color video sequences has been wavelet-transformed atdifferent settings of the wavelet filter bank and quantization threshold and with decomposition of dyadic and packet wavelet transformation strategies. The empirical evaluation of the decomposition strategy is based on threebenchmarks: a first judgment regards the perceived quality of the decoded video.The compression rate is a second crucial factor, and finally the best parameter setting with regards to the Peak Signal to Noise Ratio (PSNR). The investigation proposes dyadic decomposition as the chosen decomposition strategy.