Lossless Compression Using Conditional Entropy-Constrained Subband Quantization

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Abstract. The browse and residual compression strategy has been shown to be effective for data archival and telebrowsing of scientific databases. This paper introduces a hybrid lossless image compression technique that couples lossy subband quantization with lossless coding of the residual. Analysis is performed on the tradeoff between the rates expended on the browse and residual images. We investigate the effects of different distortion measures for compression of the browse image on the compression of the residue. The algorithm is shown to provide competitive lossless compression as well as the flexibility for progressive transmission for a moderate computational complexity.