

ON TRANS-CODING OPTIMIZATION USING RE-QUANTIZATION

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ABSTRACT

In this work, re-quantization for trans-coding of MPEG intra-frames and JPEG images is considered and analyzed. Our analysis shows that both the rate and the distortion of re-quantized images depend mainly on the ratio between the new and the old quantization steps. The new quantization step is selected using a simplified fast algorithm that ensures low distortion. Our analysis is based on the structure of the quantizer and the Laplace-like distribution of the DCT coefficients in sub-band coding. The proposed approach could be instrumental in achieving a required bit-rate at low distortion while allowing real-time implementation due to low computational complexity.

Key Words: Image Coding, Re-quantization, Trans-rating, Trans-coding, Rate-Distortion, Computational complexity.
