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Colour Image Compression Using a Modified Angular Vector Quantization Algorithm

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Abstract: This paper introduces a new angular-based VQ scheme based on converting the 3D-Layered (angular) vectors into 2D- Layered (greyscale wise) vectors using the Mahalanobis Colour Distance (MCD). The proposed VQ scheme (VQ-MCD) exhibits a comparable output performance with the conventional 3D VQ schemes at very low bit rates while at higher bit rates VQ-MCD exhibits a better visual reconstruction quality than 3D VQ. The main advantage of using the proposed VQ scheme is the high reduction in the coding time that reaches 58?67% depending on the implemented codebook size.