Color FIC by Adaptive Zero-Mean Method

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Abstract. In this work, a fractal image compression method based on zero-mean block matching method is adopted. In this method the mean of the range blocks is used instead of traditional offset parameter. This reduces and simplifies the computations of the affine parameters during the encoding process. To increase the compression gain the indexes of range mean bits have been coded using DPCM followed by shift coding. Also the scale indexes are shift coded. This method is tested on 24 bits/pixel color image. The data of the color image (R,G,B) are transformed to (Y,U,V) components (to take the advantage of the existing spectral correlation). Also the low spatial resolution of the human vision systems to the chromatic components (U, V) is utilized to increase the compression ratio without making significant subjective distortion. The test results conducted on Lena image indicated encoding time (34.64) sec, compression ratio (10.33) and PSNR (33.85). These results showed reduction in the encoding time about 54.51%, and increase in the compression ratio around 5.24%, and the image quality was nearly preserved in comparison with traditional method.