

## COMPRESSION OF MONOCHROME IMAGES USING HYBRID WAVELET FRACTAL IMAGE COMPRESSION ALGORITHM AND SET PARTITIONING IN HIERARCHICAL

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### Abstract

Fractal is a lossy compression technique used for natural images such as landscape, clouds, trees as fractal extracts self similarity in these images. The disadvantage of fractal coding include difficulties to obtain high quality encoding of images, exhaustive inherent coding time, low coding efficiency and blocking artifacts at low bit rates. Blocking artifacts can be avoided if fractal coding is performed in the wavelet domain. Fractal encoding is applied to the low pass sub band of wavelet transformed image and set partitioning in hierarchical trees coding. MATLAB simulation avoids blocking effects at low bit rate. In this work, natural images are compressed at low bit rate. The reconstructed images have no blur portion and experimental results show that reconstructed image is alike the original image. The compressed images even though have varying bit rates, the image quality from hybrid wavelet fractal coder is higher than the set partitioning in hierarchical trees. The problem of encoding fidelity common in fractal-wavelet hybrid coders is solved. This work compares hybrid wavelet fractal coder with set partitioning in hierarchical trees wavelet coder. The presented scheme improves the subjective quality of pictures for high-medium-low bit rates. The wavelet based fractal image compression method provides high quality of the image with low bit rate and higher compression ratio.

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