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Hybrid Wavelet-Fractal Image Coder Applied to Radiographic Images of Weld Defects

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Abstract : Fractal image compression has the advantage in term of its ability to provide a very high compression ratio. Discrete wavelet transform (DWT) retains frequency as well as spatial information of the signal. These structural advantages of the DWT schemes can lead to better visual quality for compression at low bitrate. In order to combine the advantages of wavelet and fractal coding, many coding schemes incorporating fractal compression and wavelet transform have been developed. In this work we evaluate a hybrid wavelet-fractal coder for image compression, and we test its ability to compress radiographic images of weld defects. A comparative study between the hybrid wavelet-fractal coder and pure fractal compression technique have been made in order to investigate the compression ratio and corresponding quality of the image using peak signal to noise ratio.

Keywords : Fractal Compression, Discrete wavelet transform, Hybrid Wavelet-Fractal Image Coder, Radiographic image