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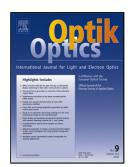
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**Hybrid Transform Based Reversible Watermarking Technique** for Medical Images in Telemedicine Applications

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**ABSTRACT** 

In telemedicine, medical images are broadcast in a secured manner and received correctly without

any loss. This paper proposes a novel reversible watermarking technique for medical images without any

additional key information. In traditional transform based watermarking method, the embedding capacity

is less also requires additional key information for lossless recovery of the original image at the extraction

side. This paper overcomes that difficulty in transform domain by using a novel hybrid reversible

watermarking algorithm to increase the embedding capacity. Integer wavelet transform (IWT) and

Discrete Gould transform (DGT) are used to develop a secure and reversible medical image

watermarking. At the sender side, watermark information is embedded within a wavelet sub band using

DGT and at the receiver side, the embedded watermark is extracted and exact original medical image is

reconstructed without any additional information. Experimental results for medical images and ordinary

images show that the proposed method meets out the requirements of the image watermarking system

such as imperceptibility, capacity, reversibility and robustness. The output of the proposed method is

superior to the existing methods.

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