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## A New Robust Reversible Watermarking Method in the Transform Domain

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### Abstract

Robust (or semi-fragile) reversible watermarking methods have been proposed to provide robustness against unintentional attacks (e.g., noise addition, JPEG compression). This kind of watermarking schemes has recently attracted more attention. This paper presents a new robust reversible watermarking scheme in the transform domain. In the proposed method, the Slantlet transform (SLT) matrix has been used to transform small blocks of the original image and the mean values of the SLT coefficients in the high frequency subbands have been shifted to carry the watermark bits. The problem of overflow/underflow has been avoided by using the histogram modification according to specific rules. The results prove that the proposed method is completely reversible with improved capacity, robustness, and invisibility.

### Keywords

Robust reversible watermarking (RRW) Histogram modification Reversibility Slantlet transform (SLT) Matrix multiplication

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