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Improved denoising using Local Adaptive Real Oriented Dual-Tree Wavelet

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Abstract – **Image Denoising is a subject of digital image processing, used to eliminate the noise in image that is corrupted in the process of acquisition, transmission, reception and storage. Denoising filters out noise from distorted image , while retaining the edges and other detailed features as fine as possible. AWGN is the most common noise which corrupts images in our daily life. In this research work, Local Adaptive Real Oriented Dual-Tree Wavelet Method and improved Denoising method are used to find out the denoised image. An improved denoising approach is based on Local Adaptive Wavelet Image Denoising in both spatial and transform domain. In this paper, we have estimated and compared performances of improved denoising method and the local adaptive real oriented dual-tree wavelet image denoising method. Performance evaluation of these methods are compared using peak signal to noise ratio (PSNR) and mean squared error (MSE) between the original image and noisy image and PSNR between the original image and denoised image. Result shows an improvement of 18.15% (avg.) in PSNR and MSE is decreased by 45.84% (avg.).**

Keywords – **Denoising, DTWT, MSE, PSNR.**