

A SYSTEMATIC APPROACH FOR DESPECKLING OF MEDICAL ULTRASOUND IMAGES

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ABSTRACT

Ultrasound is a medical diagnostic technique that is widely used because of its low cost and capability of forming real time imaging. A major problem regarding ultrasound images is the corruption by speckle noise. In this paper, speckle noise is removed by the methods based on Hard Thresholding based on Curvelets and Spatial filtering techniques such as Sobel operator, prewitt operator, Lee filter, and NL-Mean filter. The methods are evaluated and compared in terms of filter assessment parameters namely, Signal to Noise ratio (SNR), Peak Signal to Noise Ratio (PSNR), Mean Square Error (MSE) and Correlation Coefficient (CC).

KEYWORDS: Ultrasound Imaging (US), Mean Square Error (MSE), Signal to Noise Ratio (SNR), Peak Signal to Noise Ratio (PSNR), Correlation Coefficient (CC), Despeckling