De-speckling Method for US Image Enhancement by Using Adaptive SRAD Based on Wavelet Decomposition

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The speckle is caused by the constructive and destructive interference of back scattered signals due to tissue inhomogeneity. Recently, several speckle reduce anisotropic diffusion(SRAD) filtering algorithms have been applied to ultrasound images attempting to reduce speckle. These approaches provide a useful tool to reduce speckle noise in 2D ultrasound image wavelet based on multi-scale decomposition. In this paper, a new edge preserving and de-speckling adaptive SRAD filter is proposed. The new approach attempts to select the speckle scale function in the ultrasound images of a wavelet decomposition that identifies speckle scale on each layer. Our proposed method shows overall improvement in speckle reduction and edge enhancement.