Hybrid Laplacian Gaussian Based Speckle Removal in SAR Image Processing

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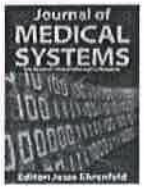

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Abstract

Synthetic Aperture Radar (SAR) images are plays a significant role in different application fields like airborne, civilian and to observe various scenarios over the horizon. Unfortunately, SAR images are heavily affected by speckle noise. The speckle degrades the image quality which makes interpretation of images harder. Therefore suppression of speckle is important for further processing. In this paper a new method is proposed for despeckling of SAR image comprises of two stages. First stage is despeckling process which is based on directional smoothing and hard thresholding technique and second stage is image enhancement process which is based on applying HLGF filter. The proposed work has been tested on and show remarkable performance over the existing system. The simulation results confirmed that achieving a better Peak Signal to Noise Ratio (PSNR), Speckle Suppression Index (SSI) compared with existing method.