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Abstract

SAR images are corrupted by speckle noise which is based on multiplicative noise or Reyleigh noise. The speckle degrades the quality of image and makes interpretations, analysis and classifications of SAR images harder. Therefore some speckle mitigation is necessary prior to the processing of SAR images. In this paper a new method is proposed for despeckling of SAR images in which Savitzky-Golay filter and median filter are used for denoising of the synthetic aperture radar (SAR) image. After obtaining filtered image they are decomposed by the use of undecimated wavelet transform. The speckled input image is also decomposed using undecimated wavelet transform. Then image segmentation is done by the use of brute force thresholding wavelet based algorithm in which each pixel of the entire decomposed image is compared and the maximum value of threshold image pixel is replaced in every iteration of image processing. Lastly enhanced directional smoothing of the image is done to obtain a despeckled image

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Index Terms

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Keywords

Undecimated Wavelet Transform SAR Savitzky-Golay filter median filter
direction dependent mask

Directional Smoothing