Speckle Reduction of SAR Images using Adaptive Sigmoid Thresholding and Analysis of various Filtering Techniques

Abstract

In this paper, an effective method for speckle reduction and image enhancement for SAR images is proposed. The novelty of the proposed method is the adaptive calculation of parameters with ease in adaptive sigmoid thresholding approach for removing the speckle noise from the SAR images followed by post-processing operation. The noise removal operation is carried out in wavelet domain using db4 wavelet. The experimental results show that the proposed method despeckles the given image efficiently. Filtering is done as post-processing operation. Comparative analysis of various filters has been carried out and the results prove that Gaussian filtering is more appropriate for enhancing the quality of despeckled SAR images.

References

- Fabrizio Argenti and Luciano Alparone, "Speckle Removal From SAR Images in


**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Despeckling  
Adaptive Sigmoid Thresholding  
Sar Image Enhancement  
Wavelet Decomposition  
Gaussian Filter