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Abstract

Change detection in remote sensing images becomes more and more important for the last few decades, among them change detection in Synthetic Aperture Radar (SAR) images are having some more difficulties than optical ones due to the fact that SAR images suffer from the presence of the speckle noise. This paper presents unsupervised change detection in multi-temporal Synthetic Aperture Radar (SAR) images based on Image Fusion and Fuzzy Clustering algorithms. Image fusion technique is used to generate difference image by collecting information from Log ratio image and Mean ratio image. In order to intensify the information of changed regions and suppress the background information, Contourlet fusion rules are chosen to fuse the contourlet coefficients. For classifying changed and unchanged

regions a reformulated FLICM (Fuzzy Local Information c-means) is proposed. This method reduces the effect of speckle noise because it is insensitive to noise. Experimental results, obtained on real multi-temporal SAR images by the Reformulated FLICM clustering algorithm exhibited low error than pre-existence.

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Index Terms

Computer Science

Image Processing

Keywords

Synthetic Aperture Radar(sar) Difference Image Image Fusion Image Change Detection Algorithms