

DETECTING CHANGES IN SYNTHETIC APERTURE RADAR IMAGES BY IMAGE FUSION AND REFORMULATED FLICM

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ABSTRACT

To detect changes in two multi-temporal SAR (Synthetic Aperture Radar) more efficiently a new technique is discussed in this paper. An unsupervised distribution-free change detection approach is for synthetic aperture radar (SAR) images based on an image fusion strategy and a novel fuzzy clustering logarithm. The image fusion technique will be used to generate a difference image by using a mean-ratio image and a log-ratio image. DWT will be used for image fusion. Wavelet fusion rules based on an average operator and minimum local area energy are chosen to fuse the wavelet coefficients for a low-frequency band and a high-frequency band respectively are used in image fusion. A reformulated fuzzy local-information C-means clustering algorithm is proposed for classifying changed and unchanged regions in the fused difference image. It will enhance the changed information and of reduces the effect of speckle noise.

KEYWORDS: SAR, Speckle Noise, Image Fusion, Change Detection, Reformulated Fuzzy Local Information C-Means Clustering