

Foucher, S., Farage, G. and G. B. Bénié. "SAR Image Filtering based on the Stationary Contourlet Transform" In *Proceedings of the 2006 IEEE International Geoscience and Remote Sensing Symposium 2006 and 27th Canadian Symposium on Remote Sensing (IGARSS 2006)*. Colorado Convention Center, Denver, CO, USA, July 31st - August 4, 2006.

Abstract

The objective of this paper is to assess the potential of the Stationary Contourlet Transform (SCT) in relation to the issue of speckle removal in SAR intensity images. The contourlet transform can be seen as a filter bank implementation of the curvelet transform. This novel approach to non linear approximation aims at providing a better representation of the geometrical content of natural images. Recently, a stationary version has been proposed that preserves translation invariance. We compare the SCT performances against the curvelet transform and the stationary wavelet transform for two different speckle reduction techniques. Results indicate a better compromise between noise removal and detail preservation.

Keywords : SAR filtering, speckle, multiscale, contourlet, curvelet, wavelet