Foucher, S., Farage, G. and G. B. Bénié. “Application of Bootstrap Techniques for the Estimation of Target Decomposition Parameters in RADAR Polarimetry” In *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2007)*. Barcelona, Spain, July 23-27, 2007.

Abstract
The precise estimation of the eigenvalues of PolSAR reponses is essential in the derivation of Target Decomposition parameters such as the Cloude-Pottier parameters (Entropy, Anisotropy and average angle Alpha). However, sample eigenvalues are strongly biased for small sample sizes leading to underestimated Entropy and overestimated Anisotropy values. In this paper, we investigate the use of a particular bootstrap technique for the correction of the bias. Bootstrap techniques are attractive because they can deal with very small sample sizes under minimal assumptions on the signal distribution. Here, we are using the jackknife bias correction technique which has been successfully applied to various signal processing problems. Monte-Carlo simulations reveal that the jackknife bias correction directly applied on the Cloude-Pottier parameters lead to better bias reduction.

Keywords : bootstrap; jackknife; polarimetry.