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[Bom2009a]

Hierarchical Segmentation of Polarimetric SAR Images using Heterogeneous Clutter Models

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Conference: IEEE International Geoscience and Remote Sensing Symposium, IGARSS 2009
Cape Town, South Africa

12-17 July 2009, vol. III, pp. 5-8

ISBN: 978-1-4244-3394-0

URL: <https://ieeexplore.ieee.org/abstract/document/5418271>

DOI: [10.1109/IGARSS.2009.5418271](https://doi.org/10.1109/IGARSS.2009.5418271)

Abstract: In this paper, heterogeneous clutter models are introduced to describe Polarimetric Synthetic Aperture Radar (PolSAR) data. Based on the Spherically Invariant Random Vectors (SIRV) estimation scheme, the scalar texture parameter and the normalized covariance matrix are extracted. If the texture parameter is modeled by a Fisher PDF, the observed target scattering vector follows a KummerU PDF. Then, this PDF is implemented in a hierarchical segmentation algorithm. Segmentation results are shown on high resolution PolSAR data at L and X band.

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Published in: [2009 IEEE International Geoscience and Remote Sensing Symposium](#)

Date of Conference: 12-17 July 2009

Date Added to IEEE Xplore: 18 February 2010

INSPEC Accession Number: 11150121

Print ISSN: 2153-6996

Electronic ISSN: 2153-7003

Publisher: IEEE