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Research Article

Scattering-Based Model of the SAR Signatures of Complex Targets for Classification Applications

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Abstract

The modeling of complex target response in SAR imagery is the key to the development of a database of SAR images with polarimetric and interferometric capabilities. In this paper, different structural parts of targets interact with the incident signal, and the resulting SAR images with specific geometries and to fix variation parameters such as image resolution, incidence angle, or operating frequency. The results obtained from the SAR simulator of complex targets developed at the Remote Sensing Laboratory opens the door, among others, to an alternative way for reliable geolocation and classification method for ships has been proposed. The preliminary classification capability even under strong clutter and ship motion is demonstrated. The same methodology is intended to be applied to urban areas. Concise and clear improvements are preliminarily treated.

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