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# Characterization of the Cross-Talk SAR Image Produced by the Cross-Polarization in a Single Offset Parabolic Reflector

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**Abstract:** Multiple calibration methods based on comparing measured data with theoretical model of natural targets have been studied for polarimetric Synthetic Aperture Radar (SAR). These methods determine the correlation between co- and cross- polarized channels which is associated to a non-perfect isolation, Cross-talk. There are cases in which these calibration methods cannot be used, this happens with the crosspolar component of the radiation pattern of reflector antennas. This component is uncorrelated with the co-polarized channels what is investigated in this paper. The antenna configuration studied consists of a single offset parabolic reflector with a digitized feed. The current cross-polarization level required in the antenna pattern for a polarimetric SAR system must be defined according to the cross- talk requirements in the image. This paper shows the characterization of the cross polar level of the antenna in the processed SAR image.

**Keywords:** Antenna, DBF, cross-polar calibration.

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