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Study of Oil spill in Norwegian area using Decomposition Techniques on RISAT-1 Hybrid Polarimetric Data.

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Abstract. Over past few years Synthetic Aperture Radar(SAR) has received a considerable attention for monitoring and detection of oil spill due to its unique capabilities to provide wide-area surveillance and day and night measurements, almost independently from atmospheric conditions. The critical part of the oil spill detection is to distinguish oil spills from other natural phenomena. Stokes vector analysis of the image data is studied to estimate the polarized circular and linear components of the backscatter signal which essentially utilize the degree of polarization(m) and relative phase (δ) of the target. In a controlled oil spill experiment conducted at Norwegian bay during 17th to 22nd June 2014, RISAT-1 hybrid polarimetry images were utilized to study the characteristics of oil spill in the sea. The preliminary results obtained by using polarimetric decomposition technique on hybrid polarimetric data to decipher the polarimetric characteristics of oil spills from natural waters are discussed in the paper.