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Image segmentation-based oil slick detection using SAR Radarsat-2 OSVN maritime data

Mdakane, LW
Kleynhans, W
Schwegmann, CP
Meyer, RGV

ABSTRACT:

Oil spills present a major threat to the sea ecosystem and thus need to be monitored on a regular basis. Synthetic Aperture Radar (SAR) data is well known for ocean monitoring capabilities. SENTINEL 1 (SEN1) extra wide (EW) mode data and RADARSAT-2 (RS2) Maritime Satellite Surveillance Radar (MSSR) modes have been developed to further improve ocean surveillance. This data can monitor large areas (400 km for SEN1 EW and over 500 km for RS2 OSVN), with a finer resolution. These modes enable improved oil slick detection (including ship detection to identify the source) performance while reducing the number of needed scenes. Numerous studies have been proposed for SEN1 data due to its free access while less work has been done on oil spill detection methods using the RS2 OSVN data. In this paper, we evaluated a segmentation-based method on RS2 OSVN data.