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SAR WIND PRODUCTS FOR A WIDE RANGE OF SAR SATELLITES

Abstract

Wind information is important for applications ranging from renewable to fossil energy. In-situ wind measurements from buoys, installations etc, have wind data from a single point location, and relies on deployment, infrastructure etc, which requires resources. Over the last decade, spatial wind observations from Synthetic Aperture Radar (SAR) have been extracted, with high accuracy covering a large area with each observation. Information about spatial wind also give great support in operations at sea by providing knowledge about the local and global climatology and weather conditions. For example, KSAT is using the SAR-derived wind speed to produce detection capability map for oil slicks since the detectability of oil is highly dependent on the wind. Using the SAR wind in this manner, we can determine whether the detection capability was good or limited in a given area within or across scenes. KSAT, supported by NORCE, offers SAR wind from 5 constellations with approximate 25 sensors, representing both X- and C-band SARs. KSATs sensor portfolio is constantly growing, and we are continuously including new sensors with SAR wind products into our service. Combining the SAR wind from many sensors that KSAT uses in their EO services, we increase both the spatial and temporal coverage and can look at trends and time series. This paper will show our SAR wind products from the diverse sensor collection with different spatial resolution, frequency, and scene coverage. We demonstrate how this is currently being utilized in the oil service, and how this can be even more explored in future marine applications.