

## **Sea surface transport derived by frequent revisit time series of COSMO-SkyMed SAR data**

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The surface transport of ‘SAR detectable’ features on sea is accurately estimated by couples of overlapping COSMO-SkyMed WideRegion ScanSAR images acquired with a very short time lag (below the hour). Tests performed with the two satellites constellation (4 operative by 2010) provided pairs of overlapping images with a time shift of 48 minutes and with a repeat time from 12 to 24h. The short time lag acquisition has two advantages: the first is that the pair of overlapping images is a sort of time derivative from which an accurate estimate of the surface transport can be extracted, the second is that the deformation of the ‘tracked features’ in the short time interval is minimal and a large number of objects can be tracked, even with the only automated processing. The sea surface transport is a crucial data in case of marine emergencies and the accurate estimate greatly improves the surveillance and forecasting capability. The potential of overlapping and short time lagged SAR imagery is to provide surface transport data of detectable objects with all-weather conditions.