

Application of Coastal monitoring using high Resolution SAR

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The successful launch of TerraSAR-X (TS-X)/Tandem-X (TD-X) and RADARSAT-2 make spaceborne SAR observation over the earth first time with spatial resolution in the order of 1 meter for civilian applications. For EO applications over coastal zones, the high spatial resolution ability of TS-X is particularly useful, e.g., for ship surveillance and sea surface wind field mapping over wind farming parks.

In the present study, we demonstrate the pre-operational services of TS-X for coastal monitoring in mapping sea surface wind field, wave field, and ship detection. Different schemes are developed for these applications, e.g., XMOD for sea surface wind field retrieval, XWAVE for measuring sea surface wave height, SAINT for ship surveillance. The near real time service of providing ship information for users via the DLR's ground station has been built up successfully.

Joint campaign for measuring sea surface wind field from multiple SAR sensors, i.e., ERS-2/SAR, ENVISAT/ASAR and TS-X in the present project is also conducted over Bohai Sea in China.