



ESA - MOST Dragon 2 Programme

2011 DRAGON 2 SYMPOSIUM

中国科技部-欧洲空间局合作“龙计划”二期

“龙计划”二期2011年学术研讨会

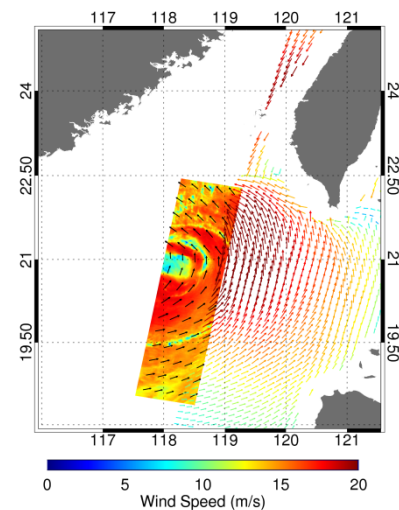
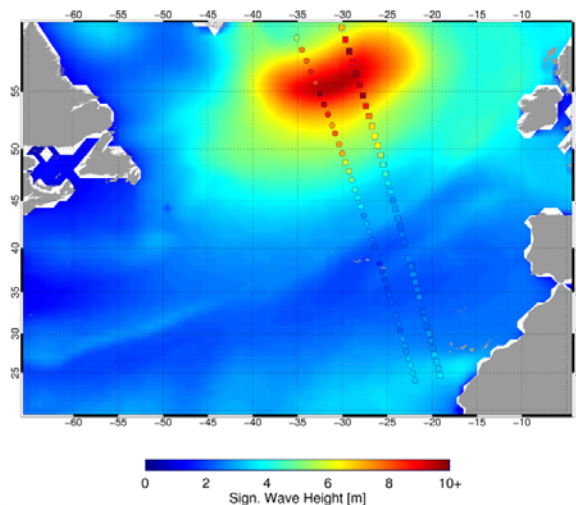
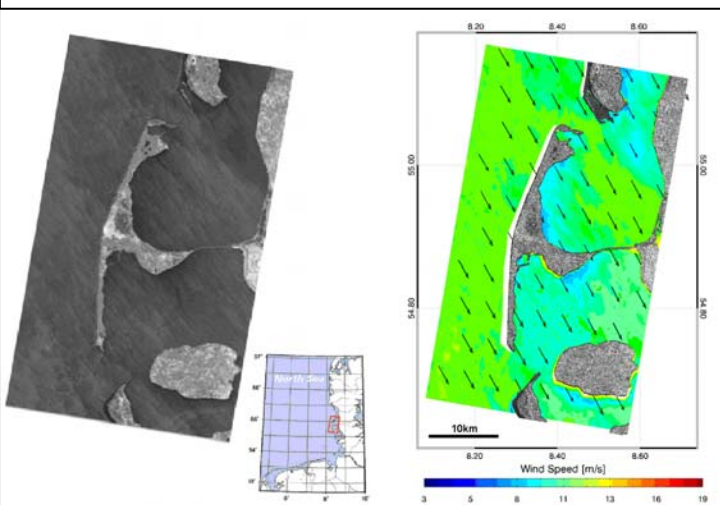
Project Summary

id. 5338. Coastal Zone

Tuesday, June 21, 2011

Main Results

- ✓ New X-band Geophysical Model Function for retrieving sea surface wind field
- ✓ New C-band empirical algorithm for retrieving sea surface wave height
- ✓ Typhoon monitoring over South China Sea using multiple SAR sensors
- ✓ Investigation of spatial variations of sea surface wind in small-scale over wind farming parks in China and European
- ✓ Case studies of oil monitoring using TS-X data in multi-mode and dual-polarization
- ✓ Cruise experiment in Bohai Sea



Issues and Recommendations

Is it possible that we can order ENVISAT ASAR in advance, but less than two weeks? This is particularly important for capturing typhoons.

List of Publications

- ✓ Li, X.-M., S. Lehner, M.-X. HE (2008), "Ocean Wave Measurements based on Satellite Synthetic Aperture Radar (SAR) and Numerical Wave Model (WAM) Data—Extreme Sea State and Cross Sea Analysis," *International Journal Remote Sensing*, **29**(21), pp.6403-6416
- ✓ Li, X.-M., X. F. Li and M.-X. HE (2009), "Coastal Upwelling Observed by Multi-Satellite Sensors," *Science in China (D-Series)*, 52(7), pp.1030-1038, doi:10.1007/s11430-009- 0088-x.
- ✓ Li, X.-M., S. Lehner, W. Rosenthal (2010), "Investigation of Ocean Surface Wave Refraction using TerraSAR-X Data", *IEEE Transactions on Geoscience and Remote Sensing*, 48(2), pp.830-840.
- ✓ Li, X.-M., S. Lehner, W. Rosenthal (2010), "Marine Environmental Monitoring Using Spaceborne Radar Remote Sensing – Supporting for Shipping Safety", *Proceedings of the Dragon 2 Programme Mid Term Results*, ESA-SP684.
- ✓ Li, X.-M., Th. König, J. Schulz-Stellenfleth and S. Lehner (2010), "Validation and intercomparison of ocean wave spectra retrieval scheme using ASAR wave mode data," *International Journal of Remote Sensing*, 31 (17), pp.4969-4933, DOI: 10.1080/01431161.2010.485222.
- ✓ Reppucci, A., Lehner, S., Schulz-Stellenfleth, J., Brusch, S.(2010), Tropical Cyclone Intensity Estimated From Wide-Swath SAR Images, *IEEE Transactions on Geoscience and Remote Sensing*, 48(4).
- ✓ Li, X.-M., S. Lehner and Th. Bruns (2011) "Ocean Wave Integral Parameter Measurements Using ENVISAT ASAR Wave Mode Data", *IEEE Trans. Geosci., and Rem. Sens.*, 49(1), pp. 155-174.

Project Planning – 2011 and 2012

- ✓ Joint cruise experiment over South China Sea
- ✓ Improvement of the XMOD1 → XMOD2 (non-linear)
- ✓ Multiple SAR observations for typhoon in summer season using ASAR, TS-X, Radarsat-2.
- ✓ Combination of TS-X measurements with Lidar for investigating highly variable sea surface wind speed over wind farming park
- ✓ Sea surface current retrieval using along-track Tandem-X SAR.