



## **LOTUS— Preparing Sentinel-3 Ocean and Land SAR Altimetry Processing for Copernicus**

Per Knudsen (1), Ole Andersen (1), Karina Nielsen (1), Camille Pelloquin (2), Philippa Berry (3), Pierre Thibaut (4), Thomas Moreau (4), Peter Bauer-Gottwein (5), Henrik Madsen (6), and Ole S. Petersen (6)

(1) DTU Space, National Space Institute, Geodesy, Kgs. Lyngby, Denmark (pk@space.dtu.dk), (2) STARLAB, Barcelona, Spain, (3) University of Newcastle, Newcastle, UK, (4) CLS, Ramonville Saint-Agne, France, (5) DTU Environment, Kgs. Lyngby, Denmark, (6) DHI, Hørsholm, Denmark

The Sentinel-3 satellite mission with its SRAL instrumentation contains new features compared to the conventional radar altimeter mission that form the basis for new innovative GMES products and applications that are not considered or implemented in the Copernicus services yet. To utilize the full potential of the new data source, new methods and processing chains need to be developed. Also, new potential Copernicus products should be developed that utilize the improved along-track resolution over both the oceans and over land. Then new operational processing, validation and delivery mechanisms need to be developed and implemented for generating the new dynamic products. A smooth transition from old to new products is important to ensure existing services. Finally, the take-up of the new Copernicus products by the value-adding sectors needs to be stimulated and demonstrated to ensure that they will be used for commercial activities. The main objective of the LOTUS project is to prepare the take-up of data from Sentinels 3.

In the initial phase, LOTUS has developed processing schemes for extracting high-resolution sea surface heights, wave heights and wind speeds from SAR mode data. Over land, the LOTUS has developed processing scheme for extracting high-resolution river and lake heights. Processing for soil moisture, and snow depth is undergoing. This presentation shows some preliminary results based on analyses using CRYOSAT data. Furthermore, new DEMO data sets are presented. These data sets facilitate the development of marine and hydrological services for Copernicus and the down-stream segment.