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

Knudsen, Per; Andersen, Ole Baltazar; Nielsen, Karina; Stenseng, Lars; Villadsen, Heidi; Pelloquin, Camille; Reppucci, Antonio; Berry, Philippa; Thibaut, Pierre; Moreau, Thomas

Total number of authors:
15

Published in:
Geophysical Research Abstracts

Publication date:
2016

Document Version
Publisher's PDF, also known as Version of record

Citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
LOTUS—Preparing Sentinel-3 SAR Altimetry Processing for Ocean and Land.

Per Knudsen (1), Ole Andersen (1), Karina Nielsen (1), Lars Stenseng (1), Heidi Villadsen (1), Camille Pelloquin (2), Antonio Reppucci (2), Philippa Berry (3), Pierre Thibaut (4), Thomas Moreau (4), Peter Bauer-Gottwein (5), Raphael Schneider (5), Henrik Madsen (6), Ole Petersen (6), and Patrick Grode (6)

(1) DTU Space, National Space Institute, Geodesy, Kgs. Lyngby, Denmark (pk@space.dtu.dk), (2) STARLAB, Barcelona, Spain, (3) University of Newcastle, UK, (4) CLS, Toulouse, 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 scientific analyses of both ocean and inland water levels. To utilize the full potential of the new data source, new methods and processing chains need to be developed. Subsequently, new potential Copernicus products should be developed that utilize the improved along-track resolution over both the oceans and over land. The main objective of the LOTUS project is to prepare the scientific and operational use of data from Sentinels 3. Then new operational processing, validation and delivery mechanisms need to be developed and implemented for generating the new dynamic products. 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. LOTUS will develop processing scheme for extracting high-resolution sea surface heights, wave heights and wind speeds from SAR mode data. Over land, the LOTUS will develop processing scheme for extracting high-resolution river and lake heights, soil moisture, and snow water equivalents. This presentation shows results based on analyses using CRYOSAT data and available S-3 data. Furthermore, new DEMO data sets are presented and examples of scientific impact demonstrated.