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CryoSat Plus For Oceans: an ESA Project for CryoSat-2 Data Exploitation Over Ocean

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The ESA Cryosat-2 mission is the first space mission to carry a radar altimeter that can operate in Synthetic Aperture Radar (SAR) mode. Although the prime objective of the Cryosat-2 mission is dedicated to monitoring land and marine ice, the SAR mode capability of the Cryosat-2 SIRAL altimeter also presents the opportunity of demonstrating significant potential benefits of SAR altimetry for ocean applications, based on expected performance enhancements which include improved range precision and finer along track spatial resolution.

The “Cryosat Plus for Oceans” (CP4O) project is supported by ESA under the Support To Science Element Programme. CP4O started in June 2012, and will continue to December 2013. The objectives of CP4O are:
• to build a sound scientific basis for new scientific and operational applications of Cryosat-2 data over the open ocean, polar ocean, coastal seas and for sea-floor mapping.
• to generate and evaluate new methods and products that will enable the full exploitation of the capabilities of the Cryosat-2 SIRAL altimeter, and extend their application beyond the initial mission objectives.
• to ensure that the scientific return of the Cryosat-2 mission is maximised.

This work is to be carried out within four sub-themes: Open Ocean Altimetry, Polar Ocean Altimetry, Coastal Zone Altimetry, Sea Floor Altimetry.

The first activities of the project are to provide a summary of scientific requirements which take advantage of the new capabilities offered by the Cryosat SIRAL altimeter and to provide a comprehensive review of the state-of-the-art, which includes an assessment of the currently available Cryosat-2 data products

This presentation will provide an overview of the project and present the results from the first activities described above.

The results of CP4O will also prove highly relevant to support the planning for future missions, including Sentinel-3 and Jason-CS which will also carry SAR enabled altimeters.