



## **CryoSat Level1b SAR/SARin: quality improvements towards BaselineC**

Michele Scagliola (1), Marco Fornari (2), Catherine Bouzinac (3), Nicolas Tagliani (1), and Tommaso Parrinello (3)

(1) Aresys s.r.l., Milano, Italy (michele.scagliola@aresys.it), (2) ESA-ESTEC, Noordwijk, The Netherlands, (3) ESA-ESRIN, Frascati, Italy

CryoSat was launched on the 8th April 2010 and it is the first European ice mission dedicated to monitoring precise changes in the thickness of polar ice sheets and floating sea ice over a 3-year period. Cryosat carries an innovative radar altimeter called the Synthetic Aperture Interferometric Altimeter (SIRAL), that transmits pulses at a high pulse repetition frequency thus making the received echoes phase coherent and suitable for azimuth processing. This allows to reach a significantly improved along track resolution with respect to traditional pulse-width limited altimeters.

CryoSat is the first altimetry mission operating in SAR mode and continuous improvement in the Level1 Instrument Processing Facility (IPF1) are being identified, tested and validated in order to improve the quality of the Level1b products.

Towards the release of the BaselineC of the CryoSat Level1b SAR/SARin products, that is expected during 2014, several improvements have been identified:

- a datation bias of about -0.5195 ms will be corrected
- a range bias of about -0.6730 m will be corrected
- the waveform length in the Level1b product will be doubled with respect to BaselineB
- improved processing for 1Hz echoes to have sharper waveforms
- surface sample stack weighting to filter out the single look echoes acquired at highest look angle, that results in a sharpening of the 20Hz waveforms

This poster details the main improvements that are foreseen to be included in the CryoSat Level1b SAR/SARin products in BaselineC.