CryoSat data quality assessment and product evolutions

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The main payload of the ESA Earth Explorer CryoSat satellite is a Ku band pulse-width limited radar altimeter, operating in 3 different modes function of a mask of geographical zones.

Over the ocean and ice sheet interiors, CryoSat mainly operates like a conventional pulse-limited radar altimeter whereas over sea ice, coherently transmitted echoes are combined in order to carry out measurements at a higher resolution. Around ice sheet margins, a 2nd antenna is used as an interferometer in order to determine the across-track angle to the earliest radar returns.

Two kinds of data are distributed to the scientific user community and are quality controlled and validated by ESA/ESRIN SPPA office with the support of an industrial consortium: the Level 1b products essentially contain average echoes collected along the ground track while the Level 2 products contain elevations and associated geophysical parameters retrieved from these echoes.

In this poster we first briefly present the characteristics of Level 1b and Level 2 CryoSat products over ocean, land ice and sea ice in addition to the results of recent quality control activities. Due to anomalies detected in previous data release and the need of continuously improving the data quality, ESA and its industrial partners has implemented a new version of the processors by the early of 2015, followed by a full reprocessing campaign. The main evolutions of this so called "Baseline C", the validation of the associated Test Data Set and the main improvements expected from this new release are also presented.