



Cryosat-2 SAR-In altimetry for coastal sea level recovery -Results from the fjords of eastern Greenland

Ole Baltazar Andersen, Adili Abulaitijing, and Stenseng Lars
DTU Space, Geodesy, Copenhagen, Denmark (oa@space.dtu.dk)

Cryosat-2 offers the first ever possibility to perform coastal altimetric studies using SAR-Interferometry. As part of the cryospheric mask on Cryosat, this was designed to map the margins of the ice-sheet using SAR interferometry when the slopes are high.

Scoresbysund on the east coast of Greenland is a large fjord system at 70N, that falls in under the SAR-in mask employed on Greenland and this region has been mapped using SAR interferometry with Cryosat-2.

Here we have evaluated the ability and use of SAR-in altimetry for coastal sea level recovery but deriving empirical retracers to process 20 hz Cryosat-2 waveforms from 2010-2014.

An amazing result of the investigation is the ability of Cryosat-2 to recover sea level even though the coast (sea level) is up to 15 km away from the nadir location of the satellite.

This ability of capture and use returns from outside the main loop in theory enables Cryosat-2 SAR-in to map sea level height of fjords much more frequently than the 369 days repeat.