



Towards the new global altimetric gravity field from five years of Cryosat-2 geodetic mission altimetry (DTU14).

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Data from the Cryosat-2 (369 days repeat mission) as well as Jason-1 end-of-life mission are the first new “geodetic mission” data sets released in nearly 2 decades since the ERS-1 and Geosat geodetic missions were conducted in the early 90’th and late 80’th.

Besides providing high quality sea surface height observations, the Cryosat-2 is close to completing its fifth cycle of 369 days. This opens for new ways of using “pseudo” repeat Geodetic mission data.

One further advantage of the Cryosat-2 is its ability of provide new accurate sea surface height information for gravity field determination in the northernmost part of the Arctic Ocean where no altimeters have measured before. We aim at releasing the DTU14 global marine gravity field, based on one five years of retracked data from each of the four geodetic missions (ERS-1, GEOSAT, CryoSat-2 and Jason-1) later in 2014.

For Cryosat-2 we are testing an new combined empirical/physical retracking system that uses physical retracking of the LRM data using a reduced parameter system in combination with empirical retracking of the SAR and SAR-In data in particularly high latitude regions.

For Jason-1 we apply a two-step retracking procedure using a tailored waveform smoothing technique to smooth the noisy part of the Jason-1 waveform to obtain more stable and hence more accurate sea surface height estimates.