



## **Altimetric Arctic Ocean Bathymetry and Regional Tide Atlas – a CP4O initiative.**

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The Arctic Ocean is a challenging region, because of its complex and not well-documented bathymetry, together combined with the intermittent presence of sea ice and the fact that the in situ tidal observations are scarce at such high latitudes. The current initiative initially addresses the bathymetry in the Arctic in attempting to improve altimetric bathymetry using the near 7 years of Cryosat-2 high quality and high resolution "geodetic" SAR altimetry all the way up to 88N. Subsequently the project progresses to use Cryosat-2 in TWO ways for improved ocean tide modelling in the Arctic Ocean. One is to use Cryosat-2 improved bathymetry the second is to use Cryosat-2 derived harmonic tidal constituents for assimilation into a regional tide model.

The first project bathymetry in the Arctic will be presented and evaluated in this presentation. It will also present the methodology to derive bathymetry from the high resolution DTU17 marine gravity field derived from Cryosat-2. Secondly this presentation highlights the methodology followed to develop the model and the performances of this new regional tidal model in the Arctic Ocean.

CryoSat Plus for Oceans (CP4O) is a project under the ESA STST program which aims to develop and evaluate new ocean products from CryoSat data and so maximize the scientific return of CryoSat over oceans. The main focus of CP4O has been on the additional measurement capabilities that are offered by the SAR mode of the SIRAL altimeter, with further work in developing improved geophysical corrections.