



## **A combined mean dynamic topography model – DTU16MDT**

Per Knudsen (1), Ole Andersen (1), Karina Nielsen (1), and Nikolai Maximenko (2)

(1) DTU Space, National Space Institute, Geodesy, Kgs. Lyngby, Denmark (pk@space.dtu.dk), (2) University of Hawaii at Manoa, IPRC, Honolulu, USA

The new DTU16MDT is obtained by combining the geodetic mean dynamic topography DTU15MDT with drifter mean velocities. DTU15MDT had been derived using the gravity model EIGEN-6C4 combined with the DTU15MSS mean sea surface model. The EIGEN-6C4 is derived using the full series of GOCE data and provides a better resolution. The better resolution fixes a few problems related to geoid signals in the former model DTU13MDT. Slicing in the GOCO05S gravity model up to harmonic degree 150 has solved some issues related to striations. Compared to the DTU13MSS, the DTU15MSS has been derived by including re-tracked CRYOSAT-2 altimetry also, hence, increasing its resolution. Also, some issues in the Polar regions have been solved. Finally, the filtering was re-evaluated by adjusting the quasi-gaussian filter width to optimize the fit to drifter velocities. Subsequently, the drifter velocities were integrated to enhance the resolution of the MDT. The results show that the new MDT resolves the details of the ocean circulation much better. Finally, mean drifter velocities have been integrated in the computations for the combined MDT model.