Geophysical Research Abstracts,
Vol. 10, EGU2008-A-05257, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-05257
EGU General Assembly 2008

Optimal Filtering of Mean Dynamic Topography Models

P. Knudsen and O. Andersen

DTU Space, National Space Institute, Technical University of Denmark, Department of Geodesy, Denmark. (pk@space.dtu.dk)

Least squares collocation is an estimation technique where discretely located observations of different kinds can be integrated. The technique allows a rigorous description of the full covariance associated with signal, the errors as well as the estimated quantities. In this presentation error covariances associated with the ocean dynamic topography are analysed and described. The multi-disciplinary project "Geoid and Ocean Circulation in the North Atlantic (GOCINA)" aims at enhancing the capacity in Earth observation using data from the European Space Agency missions ENVISAT and GOCE. In this study the techniques are applied to enhance the estimation of the Mean Dynamic Topography using the high resolution Mean Sea Surface KMS04 and the geoid model GGM02S from GRACE. Especially, for modelling marine quantities with incomplete global coverage the methods have its advantages compared to a regular expansion into spherical harmonic functions. Furthermore, the full spectrum error covariances may be derived.