



Comparison of the GOCE based GEMMA Moho with other global and regional models

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The use of gravity data to globally estimate the depth of the separation surface between Earth crust and mantle (Moho) is nowadays becoming more and more important thanks to the availability of GOCE observations.

In particular in the GEMMA project (GOCE Exploitation for Moho Modeling and Application), funded by ESA-STSE and ASI, a new crustal model constrained by GOCE gravity observations has been computed. This model is also based on ETOPO1 and a $1^\circ \times 1^\circ$ sediment model for the shallowest layers. The crust is divided into geological provinces, each of them characterized by its own relation between density and depth. Lateral density variations of the upper mantle are also taken into account.

The GEMMA Moho with its estimation error as well as the entire model including layer boundaries and densities are freely available at the website <http://gocedata.como.polimi.it>.

In the present work the GEMMA Moho is compared with other global models based on both seismic and gravitational observations and with regional models of Australia, Europe and North America. Comparisons with seismic profiles are performed too.

Apart from validating our model, this exercise gives also a hint on the accuracy with which the Moho is actually known in different regions of the world.