

I. Panet^{1,2}, Y. Kuroishi², M. Holschneider³ & O. Jamet¹

(1) Institut Géographique National, laboratoire LAREG, France

(2) Geographical Survey Institute, Space Geodesy Research Division, Japan

(3) University of Potsdam, Department of Applied Mathematics, Germany

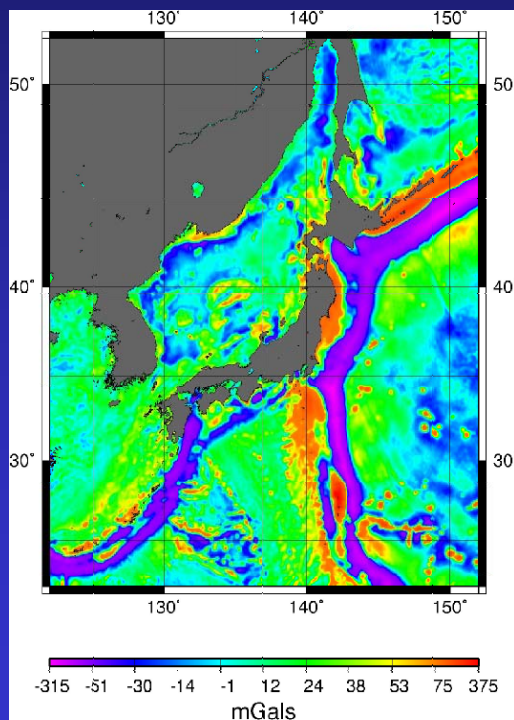
Objective ➤ to derive a high resolution gravity field over an area of interest by merging, in a flexible way and with low numerical cost, all datasets available.

How (1) ➤ The gravity potential is represented as a linear combination of Poisson multipole wavelets (Holschneider et al., 2003). The coefficients are computed by regularized least-squares adjustment of the datasets.

Regional wavelet modeling over Japan

How (2) ➤ We compute the coefficients iteratively, from the large scales to the small ones. Large scale coefficients are constrained by GRACE-derived gravity information, small scale coefficients by surface gravity. The transition between the two datasets, in the [600–160 km] frequency band, is based on a-priori knowledge on their quality.

▪ The test area



A very complex area, well-suited for testing a new methodology

▪ The combined data

▪ Large scales (down to 160 km):

EIGEN-GL04S model
(Biancale et al.)

▪ Small scales (from 600 km):

Surface gravity from
Smith & Sandwell
V15.2 grid.

Results ➤ a combined model and an analysis of datasets consistency

are on the poster !