

GRACE satellite gravity data and in-situ precise gravity data

Yoichi Fukuda[1]; Keiko Yamamoto[1]; Takashi Hasegawa[1]

[1] Geophysics, Kyoto Univ.

So far, several researches have already discussed the differences between satellite gravity data and in-situ precise gravity data as well as the combined applications of those data. For instance, Fukuda and Foldvary (2001) proposed a practical correction method of precise gravity measurements using the satellite gravity data before the launch of GRACE. At present, GRACE data are widely employed for several studies, and combined use of both satellite and in-situ data is more and more important.

The obvious differences between the satellite data and in-situ data are in their precisions, spatial and temporal resolutions. In addition, more important difference is that the in-situ data include the gravity effects due to vertical motions caused by load effects of the surface fluids masses, local land subsidence, seismic deformation, Post-Glacial Rebound (PGR) especially in polar region, and so on.

In this study, we employ the GRACE data and show practical examples to reexamine some problems which occurs when we combine the satellite data and in-situ gravity data such as absolute gravity (AG) data and superconducting gravity (SG) data.