

A new method of local gravity field recovery using GRACE line-of-sight acceleration data - Part 2 -

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We have been developing analysis method of local gravity field recovery using Gravity Recovery and Climate Experiment (GRACE) line-of-sight acceleration data based on Sugano and Heki (2004).

A line-of-sight acceleration data can be used to infer gravity field of the planet. Sugano and Heki (2004) gave a method for the Lunar local gravity field recovery using Lunar Prospector line-of-sight acceleration data. The obtained lunar gravity anomaly map achieved higher resolution than conventional method relying on spherical harmonics.

The analysis method is applied/extended to the GRACE Level 1B data analysis. The model is modified from the Lunar Prospector to the GRACE low-low satellite-to-satellite tracking configuration. Among the GRACE Level 1B data, KBR range acceleration data (KBR1B), accelerometer data (ACC1B), star camera data (SCA1B), and GPS navigation data (GNV1B) are used for the analysis.

We obtained local gravity anomaly map with 3 degree x 3 degree resolution have obtained using a month data. The local maps are connected each other to construct global gravity anomaly map.