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Combining GGM and RTM to model the gravity gradient tensor

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In this paper, by combining the Global Geopotential Model (GGM, specifically, EGM2008 is used) and the Residual Terrain Model (RTM) data, we have modeled the Gravity Gradient Tensor (GGT) in eastern Tian shan mountains areas, China. The RTM data are obtained from the Shuttle Radar Topography Mission (SRTM) elevation model and the DTM2006.0 high degree spherical harmonic reference surface. The integration of RTM data reduces the truncation errors (or called omission errors) due to the finite expansion terms of the spherical harmonic coefficients of the GGM, and compensates for the high frequency information and spatial resolution of the GGT within the study area.