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Comparison of EIGEN 6C and EGM 2008 gravity field models via Marussi tensor computed for selected areas of the Earth

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We compare two modern gravity field models, both combined from satellite and terrestrial data. EIGEN 6C comprises already GOCE data while EGM 2008 has only GRACE data. We compare the models via the gravity disturbances and components of the Marussi tensor of the second derivatives of the disturbing potential, namely Tzz. We selected areas where the differences may be interesting or even critical, e.g., in the arctic and antarctic areas (no terrestrial gravity data in Antarctic and only GRACE in EGM 2008). Other studied areas are Himalaya and similar large mountain belts where quality of the terrestrial data may be lower, and further localities, with the impact craters. The resolution of EIGEN 6C is about half of that of EGM 2008, so it is very interesting to watch what details can be achieved for specific areas with EIGEN 6C.