

SC 2.6: Gravity and Mass Displacements

Chair: Shuanggen Jin (China)

Terms of Reference

The variation of gravity field is related to the physical processes and dynamics of the Earth's interior, Earth system coupling and in particular interactions between atmosphere, hydrosphere, cryosphere, land surface and the solid Earth. Nowadays the gravity field, derived from terrestrial and space gravimetry (e.g. CHAMP, GRACE, and GOCE...) with unprecedented accuracy and resolution, provides a unique opportunity to investigate gravity-solid earth coupling, the structure of the globe from the inner core to the Earth's crust, physics and dynamics of the Earth's interior, and mass flux such as within the ocean-land water cycle. It also contributes to a better understanding of the interactions in the Earth's interior and its response to climate change.

Objectives:

- To model and inverse gravity-solid Earth coupling, e.g. crust thickness, isostatic Moho undulation, mass loadings, basin formation, thermal effects on density, gravity tensor and gravity field related deformation as well as interactions with the Earth' interior.
- To understand the physics and dynamics of the Earth's interior using gravity and other geophysical measurement techniques.
- To quantify Earth's mass flux and their interactions and, in particular, to study gravity role in the understanding of the ocean-land-cryosphere cycle.
- To promote/communicate with gravity-related communities (Oceanography, Hydrology, Cryosphere, Solid-Earth, Geodesy...)

Program of Activities

The Sub-commission will establish Work Groups (WGs) on relevant topics, and model and inverse gravity-Earth System coupling, structure and dynamics of the Earth's interior and their interactions. A Steering Committee will work closely with members and other IAG Commissions/Sub-Commissions to obtain mutual goals. Also it will promote and jointly sponsor special sessions at IAG Symposia and other workshop/conferences.

Steering Committee

- Chair: Shuanggen Jin (China)
- Co-Chair: Jürgen Kusche (Germany)
- Carla Braitenberg (Italy)
- Annette Eicker (Germany)
- Isabelle Panet (France)
- Jens Schroeter (Germany)
- Séverine Rosat (France)