IAG Scientific Assembly 2025:
Geodesy for a changing environment

Symposium G07: ICCT Symposium – Advances in Geodetic Theory

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The Inter Commission Committee on Theory (ICCT) promotes and coordinates activities to advance geodetic theory in all branches of geodesy.

These advances are strongly motivated recognizing that observing systems in all branches of geodesy have advanced to such an extent that geodetic measurements (i) are now of unprecedented accuracy and quality, can readily cover regions of any scale, yield non-conventional data types, and can be provided continuously, so that (ii) they demand improved models in order to obtain the maximum benefit of such technological development.

To this aim, ICCT is naturally prone to strongly interact and collaborate with all other IAG entities (Commissions, Services, GGOS, other ICCs, Projects) through its established Joint Study Groups (JSGs).

In this framework, for the success of the IAG Scientific Assembly 2025, on one hand ICCT is cooperating with some other IAG entities to organize joint symposia and sessions, on the other hand ICCT is responsible to organize a symposium dedicated to a number of topics which are transversal with respect to the other IAG entities.

In details, the ICCT symposium at IAG Scientific Assembly 2025 is dedicated to the advances in geodetic theory related to the following broad topics:

(i) Gravitational field modelling and analysis for the Earth and for oblate, prolate and irregularly shaped celestial bodies;

(ii) Geoid/quasigeoid modelling approaches in view of cm-precision/cm-accuracy;

(iii) Height datum: definition, new concepts, and standardization;

(iv) High-precision GNSS theory and algorithms;

(v) Geodetic quality/integrity modelling, monitoring and design.

More details on these topics from ICCT point of view can be found in the ICCT chapter of the Geodesist Handbook 2024.

We encourage contributions related to ongoing well-established research as well as new ideas which may open new research lines both in geodetic theory and applications; also, contributions which favor the cross-interaction of Geodesy and other disciplines in the frame of Geosciences and Earth observation are very welcome.

Keywords: gravitational field modelling and analysis; geoid modelling; height datum; high-precision GNSS theory and algorithms; quality/integrity modelling, monitoring and design