



## International Geoid Service (IGeS)

web: <http://www.iges.polimi.it>

President and Director: **R. Barzaghi** (Italy)

### Mission / Objectives

The main tasks of IGeS are

- to collect geoid estimates worldwide, when possible to validate them and to disseminate them upon request among the scientific community: other auxiliary data can also be collected by IGeS, when useful for the geoid determination, and might be made available with the sharp exclusion of gravity anomalies data,
- to collect, test and, when allowed, to distribute software for the geoid determination,
- to conduct researches on methods for the geoid determination, particularly trying to define optimal procedures for merging all the available data, including satellite gravity.
- to organize schools on geoid determination where both theoretical and practical aspects are illustrated. During the schools students are trained in the use of the relevant software used for geoid computation,
- to issue, at least once per year, the Newton's Bulletin, collecting papers on gravity and geoid. Also, news and results from the other IGFS Centers are welcome,
- to disseminate special publications on geoid computations, e.g. lecture notes of the schools,
- to establish and update a web page and a forum for discussing practical and theoretical aspects on geoid computation,
- to support Agencies or scientists in computing regional geoids.

The Newton's Bulletin has a technical and applied nature and will not accept papers that could be published on the International Journal of Geodesy.

Data and software given to IGeS remain property of the source, which can dictate the conditions of use and restrict their distribution. IGeS itself can indeed perform geoid computations within different projects, but not in economic competition with Firms or Public Organizations institutionally devoted to that.

### Products

- SW for handling global models
- SW for the local geoid estimation
- SW for the evaluation of different functionals of the Gravity Field
- Grids, for specified areas, of local and regional geoid estimates
- Documentation of the SW and of the data sources
- Newton's Bulletin
- Lecture notes and special publications
- International Schools on geoid computation

### Future Programs/Development

Beyond institutional activities of IGeS, the following programs are worth of specific mention:

- participation to the International ESA Gradiometric Mission (GOCE);
- computation of improved geoids for Italy and the Mediterranean area;
- participation within GGOS to the study of the height datum unification problem;
- study of improved methodologies for the determination of the geoid at global and local level;
- organization of International Geoid School, possibly one school every two years;
- participation to the GOCE Global Models validation.

### Structure

The Service is for the moment provided by two Centres, one at the Politecnico of Milano, and the other at NIMA (contact person S. Kenyon, [steve.c.kenyon@nga.mil](mailto:steve.c.kenyon@nga.mil)) and by individual scientists, called advisors.

IGeS is an official IAG Service which is related to IAG through the International Gravity Field Service and is one of the operative arms of the International Commission for the Gravity Field. The IGeS Milano Centre is supported by

Italian authorities, which nominate upon recommendation of the IGFS, a President, for its international representation and a Director for the operative management.

Its structure, tools and activities are illustrated in the IGeS reports to the Advisory Board of IGFS. In addition the IGeS advisors are individual members of IGeS, which have had an outstanding activity in the field of geoid determination and also can represent IGeS in both research and teaching activities.

At present the following distinguished scientists are IGeS advisors:

- R. Forsberg (Denmark)
- C.C. Tscherning (Denmark)
- M. Sideris (Canada)
- W. Kearsley (Australia)
- S. Kenyon (USA)
- N. Pavlis (USA)
- H. Denker (Germany)
- U. Marti (Switzerland)
- I. Tziavos (Greece)
- A. J. Gil (Spain)
- D. Blitzkow (Brazil)

Finally, within the structure of IGeS, Working Groups can be established for specific purposes, limited in time.