



International Geoid Service (IGeS)

web: www.iges.polimi.it

President: **F.Sansò** (Italy)

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

Mission / Objectives

The main tasks of IGeS are

- To collect data referring to the geoid on a worldwide scale, 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 the best procedures for the geoid determination, possibly from different sources conveniently combined.
- To provide the international community with technical schools where consolidated techniques of geoid determination, be demonstrated and students trained in the use of the relevant software.
- To produce, at least once per year, an IGeS Bulletin on geoid related matters, which in the next future should be come in IGFS Bulletin, under the name Newton's Bulletin, collecting news and results from the other IGFS Centers too.
- To disseminate special publications on geoid computations, e.g. lecture notes of the schools.

The 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 functions of the Gravity Field.
- Grids of Global Geoid.
- Grids, for specified areas, of local Geoid.
- Documentation of the SW and of the data sources.
- IGeS Bulletin (future Newton's Bulletin).
- Lecture notes and special publications.
- International Schools.

Future Programs/Development

Beyond usual 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.
- Study and possibly first computations for the solution of the problem of the unification of height datums.
- Study of improved methodologies for the determination of the geoid at global and local level.
- Organization of International Geoid School, for which contacts are carried on with Dubai and Bulgaria. More schools could be organized in the next period by the two IGeS Centres.

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, kenyons@nima.mil) and by individual scientists, called advisors.

IGeS is related to IAG, being one of the operative arms of the International Commission for the Gravity Field and of

the new International Gravity Field Service, operating within IAG.

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)
C. Kotsakis (Canada)
W. Kearsley (Australia)
W.Featherstone (Australia)
D. Milbert (USA)
S.Kenyon (USA)
N.Pavlis (USA)
H. Denker (Germany)
P. Schwintzer (Germany)
U Marti (Switzerland)
H.Duquenne (France)
D. Arabelos (Greece)
E. Tziavos (Greece)
A. Jil (Spain)
D.Blitzkow (Brasil)

Finally within the structure of IGeS, Working Groups can be established for specific purposes, limited in time. At present a W.G. on Global Gravity Field validation has been set up with the chair of T. Gruber (thomas.gruber@dlr.de). The purpose of the W.G. is to standardise the procedures of validation and combination of global models using data from the forthcoming gravity field spatial missions and terrestrial measurements. A second WG has been organized on the computation of the new European Geoid, chaired by H.Denker (denker@ife.uni-hannover.de).