International Altimetry Service (IAS)

http://ias.dgfi.badw.de

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Preamble

In the past two decades satellite altimetry has evolved to an operational remote sensing technique with important interdisciplinary applications. For geodesy, the precise and near global mapping and monitoring of the ocean surface is of particular importance. As the ocean surface is nearly coinciding with an equipotential surface of the Earth gravity field satellite altimetry contributes to essential improvements of the Earth gravity field. Even with the dedicated gravity field missions GRACE and GOCE, satellite altimetry will remain the basic source for the determination of the high resolution marine gravity field. The sampling of short-term tidal variations is possible by sufficient long altimetry time series and allows the empirically estimate ocean tide models which in turn are required to correct any geodetic space techniques. Mapping and monitoring of seasonal and secular changes of the mean sea level helps to understand fundamental processes of the System Earth: the ocean water mass redistribution, one component of the global hydrological cycle, has impact to the Earth centre-of-gravity, to Earth rotation by the ocean angular momentum functions, the temporal variations of the Earth gravity field, as well as to studies on regional sea level changes and the global sea level rise. Finally the discrimination between the ocean surface and the geoid leads to improved knowledge on the dynamic ocean topography which does not only allow to infer mass and heat transfer in the ocean but also helps to globally unify height reference systems. In summary satellite altimetry is a space technique with fundamental application to geodesy and other geosciences. It has to be a basic component of the Global Geodetic Observing System.

Following endorsements by GLOSS, IAPSO and IAG the **International Altimetry Service** was established as IAG initiative. IAS recognizes that there are already many organisations providing altimeter data and value-added products of geophysical and geodetic relevance. The IAS initiative is meant to be non-competitive, but open to identify and pool together all efforts which contribute to geodetic applications of satellite altimetry. Moreover, IAS will try to initiate projects completing or gradually improving existing services for the benefit of geodetic and geophysical applications at large.

IAS General Objectives

The general objectives of IAS shall be:

- to provide general information on satellite altimetry necessary to promote and support geodetic applications;
- to communicate with, and interface to, providers of altimeter mission data, centres which process, archive, and analyse altimeter data, and other related services and organizations;
- to promote satellite altimetry as a core element of Global Geodetic Observing Systems;
- to support the generation, comparison and validation of altimetry based products which are of particular impact to the geodetic user community and
- to help compile and analyse altimeter data, and respond to specific requirements of geodetic users.

The IAS accomplishes its mission by:

- collaborating as appropriate with space agencies, processing centres, research institutes and altimetry experts;
- establishing a web site compiling basic information on satellite altimetry, its data, products and applications as given by data providers, archive and product centres, research laboratories and experienced users;
- supporting users to read, transform, and apply data and products, to assess data and product quality and to compare similar products generated by different organisations.
- establishing pilot projects which will solve, enhance or expand various needs of geodetic users on altimetry data and products,
- considering consolidated procedures for generating value-added altimeter products which may become permanent components of the International Altimeter Service; and
- reporting to IAG, IAPSO, GLOSS, GOOS, GGOS, GEOSS and other bodies related to satellite altimetry on the status, achievements and plans of the altimetry service.