Geophysical Research Abstracts, Vol. 9, 10577, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10577

GGOS: the Global Geodetic Observing System

M. Rothacher (1), R. Neilan (2) and H.P. Plag (3)

(1) GeoForschungsZentrum Potsdam (rothacher@gfz-potsdam.de), (2) Jet Propulsion Laboratory, Pasadena, (3) University of Nevada, Reno

GGOS, the Global Geodetic Observing System, can be considered the geodetic component and the metrological basis of any global Earth observing system, especially the Global Earth Observing System of Systems (GEOSS) presently being set up and coordinated by the Group on Earth Observation (GEO). GGOS integrates the measurements collected by the various IAG Service (IGS, IVS, ILRS, IDS, IGFS, ...) using a large variety of geodetic sensors. They comprise the ground networks of SLR, VLBI, GPS, DORIS, gravimetry, etc. as well as the geodetic-type Earth observing satellites like CHAMP, GRACE, GOCE, Jason-1, etc.

Whereas nowadays most of the different types of observing instruments are analyzed separately, the huge ensemble of sensors should work and be perceived in future as one integrated and coordinated "instrument" that collects, analyzes and assimilates the observation data in order to provide information about global processes and change vital for the human habitat. For this to happen an integration effort is required on the level of sensors, data analysis and modelling.

In this presentation an overview will be given of the global processes in the Earth interior, on the Earth surface and in the near-Earth space lasting from millions of years (plate motion) to seconds (earthquakes) that can be monitored and studied by GGOS. Initial ideas on the structure and components of the future GGOS, as it is planned for the year 2020, will be outlined, too.