

Monitoring crustal deformation and the ionosphere by GPS in the Caribbean

Caribbean Countries shall be included with active participation in the geodetic and geophysical projects going on in the Central and South American region, in order to be able to use the acquired data for practice and science in their countries, and to promote geosciences. This capacity building will provide the basis for profound education and sustainable development. This may create permanent study courses in the Caribbean.

The principal objective is geosciences education and outreach in the Caribbean countries. There are several projects of IUGG Associations as well as North American and European institutions in the region, but the local scientists feel not sufficiently integrated in their performance. Examples are the research projects on solid Earth (crustal deformation and earthquakes) and ionosphere (modeling the total electron content): While in 2010 the Maule earthquake in Chile is well documented by different types of observations, (e.g. http://www.sirgas.org/fileadmin/docs/Boletines/SIRGAS_and_Chile_earthquake_20100227) there was a lack of information on the Haiti earthquake in the same year; and while the ionosphere is modeled with high spatial and temporal resolution in the South American region (e.g. <http://cplat.fcaglp.unlp.edu.ar>) we are missing maps in the Caribbean. The plan is:

1. To disseminate all available information on crustal deformation and ionosphere models in a workshop in the Caribbean;
2. To present lectures (courses) for education in these fields in the Caribbean in order to teach scientists in the analysis and use of the data;
3. To train scientists and technicians in the installation and maintenance of observation instruments (in particular of Global Navigation Satellite Systems, GNSS), real-time data dissemination (via Internet) and data analysis;
4. To integrate scientists from Caribbean countries in existing IUGG Associations' projects.