

# **IAG Sub-Commission 3.2: Crustal Deformation**

## **Status Report, Apr. 19., 2004**

Chair: Markku Poutanen

Members of the directing board:

Markku Poutanen  
Jim Davis  
Kosuke Heki  
John Manning  
Janusz Sledzinski  
Susanna Zerbini

General objectives of the Sub-Commission 3.2 include:

- to study tectonic motions, including plate deformation;
- to study postglacial rebound, but also glacial dynamics and glacial isostatic adjustment in the currently glaciated area of the Earth, as well as the water and ice mass balance;
- to study local crustal movements, some of which could be potentially hazardous
- to study sea-level fluctuations and changes in relation to vertical tectonics along many parts of the coastlines and in relation to environmental fluctuations/changes affecting the geodetic observations;
- to promote, develop and coordinate international programs related to observations, analysis and data interpretation for the three fields of investigation mentioned above;
- to promote the development of appropriate models.

There are particular objectives for the different entities, in the frame of the general objectives.

One should also notice, that the objectives of the integrated global geodetic observing system (IGGOS) includes e.g.

- the integral effect on Earth rotation of all angular momentum exchange inside the Earth, between land, ice, hydrosphere and atmosphere, and between the Earth, Sun, Moon, and planets,
- the geometric shape of the Earth's surface (solid earth, ice and oceans), globally or regionally, and its temporal variations, whether they are horizontal or vertical, secular, periodical or sudden, and
- by adding the Earth's gravity field-stationary and time-variable-mass balance, fluxes and circulation.

According to these objectives, SC3.2 should have close contacts to the IGGOS activities, because many of the items are shared in the plans of IGGOS and SC3.2.

### ***Structure and forms of activities***

The SC3.2 comprises sub-entities or working groups corresponding either to different geographical regions or different important and actual topics involved in the field of

the SC studies. These sub-entities are dealing with main scientific objectives having common general aspects and, in parallel to these objectives, follow the development of technology and measurement techniques capable to best fulfill the scientific objectives. Sub-entities or working groups will be established by the directing board according to the needs or activities.

Permanent Working Group *Geodynamics of the Central Europe*, chaired by Janusz Sledzinski (Poland) has continued studies on geotectonic regions of Central Europe. This include monitoring of recent crustal movements in Eastern Alps and the North and Eastern Adriatic, geodynamics of the Pannonian Basin, Tatra Mountains, Northern Carpathians and the Balkan Peninsula.

Close contacts between SC3.2 and WEGENER (Working group of European Geoscientists for the Establishment of Networks for Earth science Research, chaired by L. Bastos) is continued. Markku Poutanen and Susanna Zerbini belongs in the scientific Program Committee of the Twelfth General Assembly of the Wegener Project - "Integrated Modelling of Crustal Deformation", (WEGENER 2004) which will take place in Tangier, Morocco, Sept. 21-23, 2004. Zerbini is also a member of the WEGENER governing board.

Markku Poutanen is the chairman of the Working Group set by Presidium of the Nordic Geodetic Commission to prepare the plan for the NGOS – Nordic Geodetic Observing System. This will follow the guidelines and principles of the IGGOS. NGOS will be a regional implementation of IGGOS.