



IAG Working Group on Regional Dense Velocity Fields: First Results and Steps Ahead

Carine Bruyninx and the IAG Working Group on Regional Dense Velocity Fields Team

Royal Observatory of Belgium, Brussels, Belgium (C.BRUYNINX@OMA.BE, +32 2 374-9822)

The IAG Working Group (WG) on "Regional Dense Velocity Fields" was created within IAG sub-commission 1.3 "Regional Reference Frames" at the IUGG General Assembly in Perugia in 2007. The goal of the Working Group is to densify the latest realization of the ITRS and provide regional dense velocity information in a common global reference frame. For that purpose, working group members join efforts with the regional sub-commissions (AFREF, NAREF, SIRGAS, EUREF, ...) and analysis groups processing data from local/regional continuous and episodic GNSS stations.

Up to now, dedicated region coordinators have gathered velocity solutions (in accordance with the WG requirements) for their region and combined these solutions with the sub-commission regional solutions to produce a regional cumulative combined solution. Two combination coordinators performed a first test combination of these regional solutions together with global solutions in order to identify the main problems when producing a dense velocity field based on multiple cumulative position and velocity solutions. First comparisons between different velocity solutions show an RMS agreement between 0.3 mm/yr and 0.5 mm/yr resp. for the horizontal and vertical velocities. In some cases, significant disagreements between the velocities of some of the networks are seen, but these are primarily caused by the inconsistent handling of discontinuity epochs and solution numbers. Consequently, this test identified the urgent need for a consensus on the attribution of discontinuity epochs for stations common to several solutions. Due to the use of different analysis strategies and software packages by the individual contributors, finding such a consensus is a challenge as most probably not the same discontinuities are seen by different people. A possible way to go ahead for the Working Group could be to combine solutions at the weekly level. This approach is one of the alternative procedures which are presently under discussion within the WG.

More details on the WG are available from <http://epncb.oma.be/IAG/>.