20th WEGENER GENERAL ASSEMBLY

Integration of Geodetic, Tectonic and Seismological Data to Better Understand Earthquakes and The Earthquake Cycle

Poster presentation

Contribution to better understanding of seismological impacts in large civil engineering structures

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Abstract. The main source of the seismic energy on the territory of the Republic of Serbia is connected with the primary tectonic contact between the Eurasian and African/Arabian plates along the coast of the Adriatic Sea and the Balkan Peninsula. This geotectonic collision - compression contact represents a source of tectonic stress whose accumulated energy is transmitting to his background and is realized in the form of earthquakes.

Based on the available seismic hazard maps, considering both different return periods of macroseismic intensity and different seismic zones, displacement fields of various civil engineering structures (i.e. large reinforced concrete frame or shear wall buildings, bridge structures etc.) will be assessed using an approach based on the precise geodetic observations.

The permanent CORS GPS network of Serbia with an average stations distance of 60 km is used as a basis for monitoring and determining the values of ground deformations and objects displacements. The permanent stations network will be more spatially densified in each specific area by the appropriate stations of the SREF network (average stations distance 10 km) and the local network points of the civil engineering structures individually.

In this way each local stations network of the construction objects particularly, should be specially designed depending on the given conditions of this civil engineering structures which will allow a better understanding of seismological impacts.