



On the topography development of the Pannonian basin: results from geophysics, geomorphology, and active tectonic studies

G. Bada (1,2), F. Horváth (1), L. Fodor (3), P. Szafián (1), Zs. Ruzs-kiczay-Rüdiger (1) and S. Cloetingh (2)

(1) Eötvös L. University, Budapest, Hungary, (2) Netherlands Research Centre for Integrated Solid Earth Science (ISES), Vrije Universiteit Amsterdam, the Netherlands, (3) Geological Institute of Hungary, Budapest, Hungary (bada@ludens.elte.hu)

The Pannonian basin represents an area of evolving topographic habitat strongly influenced by active tectonics and related differential vertical crustal motions. In this contribution various examples are presented to highlight the nature and relative role of processes affecting continental topography in the Pannonian region. These include large-scale lithospheric deformation, recent reactivation of upper crustal shear zones and ongoing basin inversion at different scales. Qualitative and quantitative analysis of these processes holds the key to better understand the feedback mechanisms between neotectonics and surface processes. Of particular importance are the mapping and 3D reconstruction of active tectonic structures, constraints on fault reactivation potential and the seismotectonic habitat, tectonic controls on lake and river network development, the temporal aspects and rate of crustal deformation, and, in addition, the potential role of climate processes. With the aid of a range of observation techniques, partly in international co-operation, these research objectives are targeted in well selected study areas representing the most actively deforming parts in the centre of the Pannonian region. The status and results of these efforts, carried out in the framework of the Topo-Hungary project launched to study tectonic topography in the Pannonian basin, are presented and discussed.