



Recent movements of the earth's surface of the Carpathian region

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The named title of the paper reflects the studies realized according to the plan of the Workpackage WP.10.6 "Geodynamics of Northern Carpathians" and presents one of the main parts of the monograph "Investigations of the recent geodynamics of the Ukrainian Carpathians" which was prepared and published by a group of geodesists, geophysicists and geologists in 2005 in the Ukrainian-language version. The group includes more than 20 authors which present the National University "Lviv Polytechnic", Institute of Geophysics of National Academy of Ukraine and the Carpathian branch of its as well as other Ukrainian research institutions.

In the part "Recent movements of the earth's surface of the Carpathian region" an analysis of the recent vertical and horizontal movements of the earth's surface in the Carpathian region was made. It was based on the results of the existing investigations of the spatial movements and deformations as well as on the analysis of the maps of vertical movements charted by the repeated levelling data. Besides, the results of horizontal deformations of the earth's surface on the Carpathian geodynamic test field have been obtained. They are represented in the form of the charts of:

- the velocity value accumulations of deformation components;
- orientation of the principal axes of the deformations and distribution of the velocities of their accumulations;
- distribution of the velocities of dilatation accumulations.

The following studies were directed on the investigation of the recent vertical and horizontal movements of the earth's surface by the data of permanent GPS measurements. As a result, the charts of the spatial velocities of movements and deformations of the

earth's surface on the territories of the Central Europe and Carpathian region have been worked out on the basis of the averaged weekly solutions of GPS measurements. As the third part of the investigations, we should point out the determination of the precise site of the IVAN point (Pip-Ivan mountain which is the second highest top of the Ukrainian Carpathians) by the data of the GPS measurements realized in 2002 and 2003.