



## **Geodynamics, tectonics and seismicity of North-Eastern Pancardi (modern look)**

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The North-Eastern Pancardi includes the Carpathians region of Ukraine and adjoining territories of Poland, Slovakia, Hungary and Romania. Here are such important different secular geostructures of Europe as a contact zone of the Eastern European and Western European Platform, Danish-Polish Furrow (Tesseire-Tornquist line), Carpathian arc Curve (include the contact zone of the Western and Eastern Carpathians and northern part of Eastern Carpathians), Pannonian Depression. These structures are characterized by different blocking time. Besides, their formation and development are caused by different geodynamic processes. Therefore, modern structure and geodynamics of the region is very complex. As regards the general geodynamics of Ukrainian Transcarpathians tectonosphere that its deep structure, rheology and geodynamics, local earthquakes scenarios and mechanisms have been investigated by us on the base of seismic, parametric seismogeoaoustic, gravimetric, geothermic, geomagnetic, geoelectric, extensometric, geodetic, geomorphological and other data analysis. Two basic processes were most brightly shown in structure and geodynamics of regions lithosphere. One of them that is the general compression of Carpathian-Balkanian-Dinariden megaregion lithosphere, was caused by global plate-tectonic process – by pushing of African and Arabian plates on Carpathian-Balkanian-Dinariden structures, which are jammed between them and south edges of the East-European and the West-European platforms. Another is a process of smearing in sides an asthenolite from under Pannonian depression, as a result of interaction in the first place of these processes is available now Carpathian-Dinariden rings megastructure. So, on an alpine stage here take place different tectonic processes, in particular, in type so-called «crocodile» tectonics (in internal, south edges of Eastern Carpathian arc), a half-graben type (in external, north edges of its) etc. At that take place the moving of sedimentary layers up to south edges of platforms and also moving of lower horizons

of crust under him. Just as upper sedimentary layers at that move up to each other, forming the whole system of the Carpathians covers and flexures, under layers were also move, gradually penetrating under each other. This tectonic process (aggregate of pushing and shoved layers) is named by us as multi-tier «crocodile» or «shaking hand» tectonics.

Concerning to features of modern regional geodynamics, as show the newest GPS-researches data, at the present stage the most expressing here is the second (asthenolitic) of named before processes, which predetermines a mode of subdiagonal south-western – north-eastern expansion of megaregions lithosphere. This process is brightly shown, in particular, in western part of Ukrainian Transcarpathians lithosphere, where on extensometric and geodetic data the situation of a lithosphere stretching is discovered by us. Such geomechanical mode is in characteristics of local seismicity reflected, in particular, in positive creepex of local earthquakes, it with the spatial distribution of geomagnetic field characteristics variations is genetically corresponded and with a zone of a high deep thermal stream and area Neogene volcanism in Transcarpathians is connected. One of more important feature of Transcarpathian deflections lithosphere is its strong subhorizontal stratification with presence of the lowered velocities subzones in “granites“ and “basalts“. By results of carried out by us complex interpretation of geophysical data these subzones are mechanically weakened subzones, and on them the creeping of the bottom lithospheres layers concerning top is presented. This process is accompanied by local earthquakes with specific scenario of preparations and mechanisms of realizations, which are brightly displayed in parametric seismo-geoa-coustic, geomagnetic, geoelectric, instrumental seismological and macroseismic data.

Geodynamics of lithosphere is directly coupled with the processes of local earthquakes preparation. Proceeding from our experience long-term geodynamic and seismoprog-nostic researches in Carpathian region of Ukraine during which predictors of local earthquakes have been registered, it is possible to offer the concrete ways of realiza-tion of the seismic prognosis.