The geo-analyses of the horizontal movement tendencies in the Eastern Slovakia

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A b s t r a c t : Constraining the present day strain rate in Central Europe is crucial for reconstructing the tectonic evolution of this area. Accurate time series of (possibly) permanent GPS stations are required to infer the local velocity and the associated strain rate field. This requirement is especially recognized within the CERGOP project, where several Research Groups from Central Europe Institutions co-operate in GPS based research.

The contribution from the Institutes of Geodesy (FCE BUT and FCE SUT) results not only in supplying of the GPS Data but in Structural evaluation of these data, too. The Example of Complex analyses and interpretation of horizontal deviation tendencies measured through GPS campaigns *(Mojzeš and Papčo, 2004)* with the set of Geo-Data information from the Eastern part of the Western Carpathians (Eastern Slovakia) is presented.

This article demonstrates the possibilities of geophysical data in the process of verification and evaluation of horizontal movement tendencies, gathered during three GPS observation "campaigns", in the area of the West and the High Tatra Mountains *(Mojzeš and Papčo, 2004; Czarnecki et al., 2002)*.

On example of Muráň – Malcov transcurrent tectonic system it is possible to find components explaining the different orientation of horizontal movement vectors at GANO GPS Station. The Results of analyses of Complex Geo-Data set offer detail and regional structural model explaining the micro-structural deformation in Gánovce block, located between the Kežmarok - Malcov, Vikartovce and Vrbov faults. This hypothetical kinematical and structural-tectonic model can be tested in next periods.

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