

KINEMATIC ANALYSIS OF THE NORTHERN PART OF THE CENTRAL CARPATHIAN PALEOGENE BASIN (WESTERN CARPATHIANS, SLOVAKIA)

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The northern part of the Central Carpathian Paleogene Basin (CCP Basin) consisting of the Eocene to Oligocene, up to 4 000 m thick deposits, is restricted by an conspicuous NE-SW structure called Subtatric–Ruzbachy fault system (SRFS). The system influenced the kinematic evolution of the essential part of the area. Three deformation phases were proved by a structural research confirming assumption about polyphase tectonic activity in the area. The first deformation phase is connected with NNW-SSE compression resulting in uplift of the Paleogene deposits of the region and erosion of the younger formations cropping out south of the SRFS. The age of the deformation is assumed to some 15 MY as shown by timing of the High Tatras Mts. uplift west of the SRFS. The total uplift during the Neogene and Quaternary is thought to be about 3 100 m and suggests still active structure. The second deformation phase is related to the E-W compressional stress resulting in NE-SW dextral strike-slips. Their activity induced almost perpendicular „relaxation,, NW-SE faults which often segment SRFS. The occurrence of travertines on the structures indicates its Quaternary activity. The activity probably represents a continuation of the Miocene-Pliocene deformations when the system probably originated. The youngest deformation phase near the SE margin of the studied area is characteristic by NW-SE extension. The etape is accompanied by activation of normal faults which may be observed in the borehole CH-1 profile.