calculated from precise leveling and Interferometric Synthetic Aperture Radar (InSAR) is 6–9 mm/y, and is similar to the average Holocene rate (Weinberger et al. 2006b). Present-day crustal configuration, including intensly faulted basement resambles the Late Triassic structure of the Kłodawa salt diapir and its basement, located within the central part of the Mid-Polish. Such similarity is also related to possible influence of strike-slip movements on the Triassic evolution of the Mid-Polish Trough.

The comparative study of the Mid-Polish Trough and the Dead Sea Basin is being completed within the International Lithospheric Programme Task Force "Origin of Sedimentary Basins".

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Internal Flow Fabric Study of Viscous Lava Domes in Central Slovakia by Means of AMS and Quantitative Microstructural Study

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Two examples of acid and intermediate volcanic bodies in the central Slovakia (middle miocene in age, Konečný et al. 1995) were studied in order to understand the mode of magma flow and emplacement mechanism of highly viscous volcanics. We present preliminary results of integrated AMS and microstructural study. The garnet-bearing andezite dome Breziny (Neresnica Formation., Badenian) was investigated in detail. The quarry located cca 1,5 km NE from the Breziny village exposes southern margin of an extrusive andezite dome. Ten samples were collected from three quarry levels for detailed AMS and textural analysis. It was suggested that the internal magmatic fabric in the quarry forms a fan-like pattern (Konečný et al. 2004), typical for andezite extrusive domes in the region. The strikes of magnetic fabric in the quarry show a sinusoidal trend with one limb subparallel to the dome margin in the map and rather steep dips (80–90°) and do not show any trend of dips incident to fan-like pattern. The magnetic lineations are subhorizontal (0–35°) and trend NW-SE on the southern margin of the quarry. In the centre (2nd and 3rd quarry level) lineations are vertical and the AMS fabric there is also characterised by slightly lower values of T parameter than in the rest of the samples. Susceptibility-temperature curves in HT and LT document a presence of paramagnetic minerals (amphibole, biotite) and titanohematites. For the purpose of textural analysis, slabs parallel with AMS K1K3 and K2K3 planes were prepared and the fabric intensity and geometry defined by alignment of dark (mainly amphiboles) and white (mainly plagioclase and pyroxenes) minerals was statistically quantified from the slab photographs. The digitization of mineral objects and statistical evaluation of the textures was carried out using ArcView and extenstion PolyLX in Matlab environment (e.g., Lexa 2005). We compare the rock textures using the eigenvalue ratios of the bulk orientation tensor and aggregate distribution throughout the quarry. Furthermore we try to discriminate signatures of magma evolution from the grain size distribution (CSD) curves (Cashman and Ferry 1998). In addition, preliminary results from the rhyolite Jastraba Skala dome (sarmatian-panonian) comprising the relationship between magmatic textures and AMS are briefly discussed.

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Vertically Decoupled Thickening and Exhumation Processes in Orogenic Supra- and Infra-Structure During Building of Gemer-Vepor Continental Wedge

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Thickening of Gemer supracrustal unit occurred through development of wide positive cleavage fan (GCF) structure recently dated at 130–120 Ma using K/Ar and monazite U/Th method. This crustal scale structure is characterised by development of steep fabric in the core of the GCF associated with vertical extrusion of deeper portions of the Gemer Unit. In contrast, the Vepor infrastructural unit shows development of flat mylonitic fabric in deeper part of the basement associated with homogeneous burial. The internal deformation of the Vepor basement is poorly dated ,but it is bracketed by onset of inversion of the Zliechov basin to the north (~110 Ma) and 40Ar/39Ar micas and hornblende cooling ages in range 80–90 Ma. These two contrasting tectonic regimes were separated by greenschist facies mylonitic basement rocks and large portions of weakly deformed basement material. The plausible tectonic model explaining structural and metamorphic evolution of both crustal levels suggests existence of neutral level that is most likely located between Gemer and Vepor interface (Gemer-Vepor Contact Zone – GVCZ). This zone served as a decoupling horizon separating vertically elevated rocks from those, which were simultaneously buried. The hanging-wall Gemer Unit thickened by convergent flow while the Vepor Unit burial occurred by divergent flow or “syn-burial ductile thinning”. These competitive processes are registered by development of the GCF in the Gemer Unit and by PT gradients of different structural levels in the Vepor Unit. The lower crustal flow in the Vepor infrastructure progressively generated strong horizontally oriented mechanical anisotropy leading to continuous decrease of buckling resistance of the pile followed by large scale folding of the Vepor-Gemer multilayer system at ~80 Ma. The weakly deformed upper part of the Vepor basement surrounded by weaker Lower Paleozoic Gemer rocks and mylonitized lower crust dominated by amphibolite facies micaschists and gneisses represented a rigid layer controlling wavelength of crustal scale buckles. During folding the orogenic lower crust was exhumed by viscous extrusion along narrow belts when the folding mechanisms passed from active to passive amplification. We propose, that during this process the GVCZ was reactivated by fold hinge parallel slip (Trans-Gemer Shear Zone) of the suprastructure, commonly termed as “unroofing” of the Vepor basement. This process likely results from non-cylindrical growth of crustal buckle as well as from possible changes in far filed forces responsible for development of large-scale Upper Cretaceous sinistral shear zones.