basement in this part of the PCF suggests that bending of the lithosphere below the thrust belt was dominant process that has created present-day large-scale architecture of the PCF.

Very different results were obtained for the eastern part of the study area located between Rzeszów and Przemyœl. Seismic data revealed large amount of tectonic deformations present within the Palaeozoic and Precambrian basement of the PCF. They consist of either horst-and-graben structures related probably to strike-slip movements or systems of large normal faults and rotated blocks located NW-SE. Also, it was concluded that normal faults present in the easternmost part of PCF developed partly as a synsedimentary features and were slightly inverted during late Sarmatian. Moreover, maximum of extension controlled by these faults was located not immediately in front of the thrust belt but significantly further towards the north. This implies that extension was not only related to the lithosphere fracturing due to its flexure below the Carpathians but was also controlled by intense faulting related to Miocene reactivation of the Tornquist-Teisseyre tectonic line. Tectonic inversion of normal faults can be attributed to last stages of compression within the Carpathian thrust belt.

Oszczypko N., Slaczka A., 1989. The Evolution of the Miocene Basin in the Polish Outer Carpathians and Their Foreland. Geologica Carpathica, 40(1): 23-36.

Basin evolution of several sub-basins of the Pannonian Basin System - constraints from subsidence analyses and basin modelling

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Subsidence histories of the Vienna Basin, the Danube-Kisalfold Basin (Little Hungarian Plain Basin), the Styrian Basin and the East Slovakian Basin (Trans Carpathian Basin), in total based on over a hundred individual wells, are compared.

Striking is the contemporaneous onset of basin subsidence in all basins, together with the Karpatian maximum in subsidence rate for all basins. The Karpatian subsidence maximum indicates that Karpatian extension was the major feature governing basin evolution and all later phases are of lesser magnitude. In some cases aditional subsidence accelarations are observed, mainly for Pannonian times.

Uncertainties arize from the difficulties on excact quantification of age and paleowaterdepth. These problems are directly related to the time-transgressive character of the Pannoninan units. Karpatian and Badenian ages and paleowaterdepths are much better constrained.

Numerical absin modelling, adopting a modified McKenzie type extensional basin model is capable of explaining the observed subsidence reasonable well. Key features of the model are: (1) Karpatian extension only, (2) -Badenian-Pannonian postrift cooling, (3) relative small basins allow fast cooling, and (4) different amounts of crustal v.s. subcrustal extension.

Modelling also indicates that the Karpatian extension was the main basin forming process. However, there are numerous excellent documentations of later tectonics and changing stress fields. Apparently these are of a lesser magnitude with respect to basin subsidence.

Diversions from the postrift cooling trend in subsidence can be caused by: (1) uncertainties in data; (2) renewed extension phase in Pannonian times, with different impact; (3) lateral and temporal changes in rheology. Due to the problems age and waterdepth it was difficult to constrain the post-Karpatian evolution of the individual subbasins in detail.

Heat flow in the PANCARDI region and its geodynamic significance

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Heat flow is closely related to the structure and evolution of the Earth's lithosphere. More than 600 heat flow determinations and many thousands heat flow estimations were carried out in the PANCARDI region. The average heat flow in the Pannonian basin is about 90-100 mW/m^2, in contrast with a characteristic value of about 50-60 mW/m^2 in the surrounding region. The only exception is the central part of the Eastern Alps, where the heat flow is above 100 mW/m^2. Towards the Dinarides the heat flow is decreasing rapidly, and the Outer Dinarides is an extremely cold zone characterized by values of 30-40 mW/m^2. In the Inner Dinarides and in the transition zone towards the Pannonian basin geothermal highs occur. A large positive heat flow anomaly can be found at the southern part of the Pannonian basin, around Belgrade, which continues to the SE along the Vardar zone.

The heat flow is influenced by near surface geological processes, like groundwater flow and sedimentation and erosion. Intensive karstic water flow is the reason of the low heat flow in the Outer