For Early Cretaceous subsidence curves are less reliable (mainly due to hiatuses), nevertheless they show higher diversity and the basin seems to behaved in a less uniform manner.

During Albian-Cenomanian slow subsidence appeared across all zones of the basin, and since Turonian rate of subsidence began to increase, creating a compressional type of curve. This is coincident in time with Turonian folding in Inner Carpathians to the South of PKB basin. The subsidence for Late Cretaceous might be thus explained by flexural bending mechanism in front of folding Inner Carpathians.

Pre-orogenic evolution of the Polish part of Outer Carpathians - quantitative subsidence and uplift analysis

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The Outer Carpathian flysch sequences in Poland are divided into several tectonic and facial units, related to primal sub-basins. Mainly Skole, Silesian and Subsilesian units are analysed here; for Magura and Dukla units results are very preliminary. Area of research is Middle and Eastern Polish Outer Carpathians. Synthetic reconstructed 1-D profiles for individual zones of sub-basins were prepared, covering Berriasian-Early Miocene basin history at most. For these profiles an input data (thicknesses, absolute ages, bathymetry, lithological parameters) were quantitatively balanced and profiles were backstripped in order to calculate tectonic component of the basement vertical movements. There is good control on thicknesses, lithology and stratigraphy of individual formations. Control on bathymetry is poor (error bars up to several hundreds meters) and was estimated using lithofacial and faunal indicators. Bathymetry is a key factor controlling curves character for Cretaceous-Early Oligocene.

Subsidence patterns similarities over the all basin suggest that geotectonic processes of regional scale controlled subsidence and uplift of sub-basins.

Relatively slow Berriasian-Hauterivian subsidence is interpreted as thermal cooling that followed possible earlier (Late Jurassic) extensional tectonic event (particularly in Silesian sub-basin).

Since Turonian-Coniacian until Maastrichtian-Paleocene an uplift of several hundreds meters over Skole, Subsilesian and Silesian sub-basins took place; it coincidented in time with Inner Carpathians folding. This uplift is interpreted as being a result of change in tectonic regime into compressional one. It is also suggested to be a part of geodynamic frame of Inner Carpathians foreland inversion, migrating in time to the North (e.g. Polish Trough). Our preliminary results show no presence of Late Cretaceous uplift in Magura and Dukla sub-basins. It might be an indicator of major rheological differences between crust of both mentioned parts of Outer Carpathian basin.

During Paleocene subsidence was re-established (in Magura and Dukla sub-basins increased in rate) and lasted until Middle-Late Eocene. Mechanism of subsidence could be an isostatic rebound after previous uplift, although the interpretation is very hypothetical.

During Late Eocene rapid uplift of a big magnitude (2000m?) started, which lasted until Early Oligocene. The uplift was followed by minor subsidence, being the last tectonic event in the basin. According to our interpretation, the uplift was a reaction to compressional stress which, due to general plate convergence background, increased after shortening processes to the South of Outer Carpathians had ceased. The increasing stress preceded shift of the locus of shortening to the North. Its final relocation and creation of main detachment surfaces resulted, in our opinion, in stress relaxation and Late Oligocene-Early Miocene limited subsidence. Further continuation of shortening introduced orogenic processes into analysed area.

Tectonical activity and facies distribution of the Neogene and Quaternary deposits in the Croatian part of the Pannonian Basin

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Recent structural relations and main tectonical movements in the north-western area of the Croatian part of the Pannonian Basin are presented. Relation; stress-deformational framework is explained. Transperssion of considered area is defined. Right wrench faults are pointed out. The most active faulted zones and different structural types are defined. The considered area is correlated with the adjacent region. Local structures and suitable traps for hydrocarbon accumulations are defined as well. Several typical examples of structural and lithofacies features are singled out. According to the well data as well as to the outcrop exploration and seismic profiling, regional litho-stratigraphical relations and facies distribution are explained. Due to the geochemical prospecting and correlation the most perspective zones are de-fined. All the data will be presented by the slides and/or transparency and on the posters.

A new model on the tectono-sedimentary evolution of southwestern Pannonian basin during the Late Miocene

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A new model on the tectono-sedimentary evolution of southernwestern Pannonian basin during the Late Miocene is presented. This was based on the interpretation of about 190 km of high-resolution, single-channel seismic profiles acquired on Lake Balaton and about 1700 km of multi-channel reflection seismics in SW Hungary.

Seismic stratigraphic interprertation has been calibrated by geologic mapping of selected areas and well logs. A magnetostratigraphic record was also available from a corehole in the study area, together with recent K/Ar dating of basaltic rocks from the Balaton highland.

The Late Neogene "post-rift" evolution of Pannonian basin was characterized, in a broad sense, by decreasing rates of subsidence (thermal subsidence), parallel with the increase of sedimentation rates. This resulted in a classic trangressive-regressive 2nd-order cycle, with general progradational patterns, followed by late-stage aggradation in the basin fill.

Our study showed that higher-order cyclicity can be also recognized at a regional scale in the Late Neogene "post-rift" sequence of south-western Pannonian basin. In particular, five 3rd-order sequence boundaries (Sar-1 and Pan-1 to Pan-4 Sequence Boundaries) can be documented on regional seismic profiles. Sequence Boundary Pan-2 has a magnetostratigraphic age of about 8.5 Ma and is associated with significant water-level drop in the Pannonian Lake and consequent exposure of basin margins that is widely recorded in the "marginal facies" of western Hungary.

The stratigraphic unit bounded by Pan-1 SB and Pan-4 SB is correlated with the Tortonian-Messinian 2nd-order cycle of the Mediterranean.

Following the Middle to Late Miocene extensional phase, the Pannonian area has experienced a tectonic reactivation during Late Pliocene and/or Quaternary. This is manifested by accelerated subsidence at the basin center and faulting associated with uplift and extensive erosion at the basin flanks. Erosional truncation of strata due to late-stage uplift of the Bakony mountains is best imaged by regional seismic profiles across southern Transdanubia and high-resolution seismic profiles of Lake Balaton.

The Neogene Styrian Basin

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The 100 km long, 60 km wide, and more than 4 km deep Styrian Basin is located at the eastern margin of the Alps and forms part of the Pannonian Basin System. It represents an extensional structure on top of a crustal wedge, which moved eastward during the final stages of the Alpine orogeny.

Basin evolution is subdivided into an early Miocene (Ottnangian to Karpatian) synrift and a middle to late Miocene postrift phase of subsidence. During the synrift phase thick clastic limnic/ fluviatile and marine sediments were deposited. The climax of extension during the synrift phase favoured the ascent of andesitic magmas. Today the voluminous shield volcanoes are nearly totally buried by younger sediments. An unconformity separates lower and middle Miocene sediments and is interpreted as the transition from the synrift to the postrift stage. During the postrift stage intercalations of sandy and shaly sediments and algal reefs were deposited. Basin inversion resulted in the erosion of a few hundred meters of sediment during the Pliocene and the Quaternary. Uplift was accompanied by a second volcanic phase producing basalts in Plio-/Pleistocene times.

The thermal history of the Styrian Basin was governed primarily by the Miocene magmatic event. Volcanic centers were characterized by extremely elevated heat flows (>300 mW/m^2) and heat flow decreased to background values (about 120 mW/m^2) at a distance of about 10 kilometers from the centers. After the early Badenian heat flows decreased and are in the range of 55 to 85 mW/m^2 since Sarmatian times. The volcanic activities in Plio-/Pleistocene times had only little influence on the regional heat flow pattern.

Subsidence analysis and the results of quantitative basin modelling suggest that the lithosphere beneath the Styrian Basin was extremely weak during Ottnangian-Karpatian times. This is probably due to high extension rates and high heat flows associated with Karpatian to early Badenian magmatic activity. Subsequent cooling enhanced the flexural rigidity. Depth dependant rheology models