

For Early Cretaceous subsidence curves are less reliable (mainly due to hiatuses), nevertheless they show higher diversity and the basin seems to have 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

Pawel Poprawa¹ and Tomasz Malata²

¹ Polish Geological Institute, Warsaw, Poland

² Polish Geological Institute, Kraków, Poland

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 coincided 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

Eduard Prelogovic¹, Dubravko Lucic², Mate Dragas², Bruno Saftic¹, Gerda Baric² and Zeljko Ivkovic²

¹ University of Zagreb, Zagreb, Croatia

² INA-Naftaplin, Geological Exploration & Development Division, Zagreb, Croatia

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. Transpression 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