

## **Role of Evaporites in Compressional Tectonics – Examples from the Frontal Carpathians, Southern Poland**

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It has been for long recognized that evaporites in general, and rock salt in particular, is of key importance for evolution of fold-and-thrust belts, as evaporitic layers often form preferred levels of detachments within the orogenic wedge. The majority of the detached fold-and-thrust belts displace above preshortening evaporites, however, some of fold-and-thrust belts also use syn-compressive evaporitic levels related to deposition within their foredeep basins. Amongst primary factors that influence structural style of orogenic front are (1) type of evaporites (salt vs. anhydrite) and (2) thickness of evaporitic units.

The Outer Carpathians are genetically linked to the Miocene Carpathian foredeep basin that developed in front of the advancing orogenic wedge. Foredeep infill consists of the Eggerian to Sarmatian sedimentary sequence and includes important Badenian evaporitic formation. Presently, in front of the Outer Carpathian flysch (pre-Miocene) units, a zone of deformed foredeep deposits of variable width exists, reaching max. 10km in the area between Kraków and Tarnów. In vicinity of Tarnów Carpathian front is dominated by wedge tectonics, induced by presence of relatively thin anhydrite that acted as local detachment. Tectonic wedging produced a well-developed triangle zone of the Miocene Zgórbice unit. Core of this triangle zone is built by passive-roof duplex consisting of the supra-evaporitic siliciclastics. In vicinity of Kraków (Wieliczka region) Badenian evaporites include thick rock salt, and this resulted in partly different style of compressional tectonics. The Zgórbice unit in the Wieliczka area is also characterized by triangle zone, but it is cored by highly deformed thick salt units known from the Wieliczka Salt Mine. The Wieliczka triangle zone might have formed where lateral changes of evaporitic facies occurred at the transition from thick rock salt to thinner anhydrite facies.