

# New paleomagnetic data from Fatricum and Hronicum in the Tatra Mts (Poland) — further evidences for Cretaceous remagnetization in the Central West Carpathians

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The Tatra Mts contain the northernmost occurrence of "core mountains" in the Central West Carpathians (CWC). It is a horst of crystalline pre-Mesozoic rocks covered by sedimentary sequence of Early Triassic–Late Cretaceous (Turonian) age. The Late Cretaceous (pre-Senonian) orogeny resulted in the formation of a nappe pile thrust northward. The Tatric, Fatric and Hronic tectonic units are distinguished. The Tatric units were subjected to only minor horizontal displacements. The Fatric (Križna) and Hronic (Choč) units were detached, transported from the south and thrust over the Tatric units. Paleomagnetic investigations have been carried out for several years in order to establish the paleotectonic position of the Mesozoic sedimentary series of the CWC in relation to the European, African and Adriatic plates. All paleomagnetic data gathered so far mainly from Jurassic rocks indicated the proximity of the CWC to the European Platform, however, the age of

magnetization was poorly constrained and there were strong suspicions of remagnetization. In this study the entire profile of the Fatricum (from the Middle Triassic to the Lower Cretaceous) in several Križna sub-units was investigated. Additionally, Middle Triassic limestones were sampled from the Choč unit in the Western Tatra Mts. In all localities a single, normal polarity component of magnetization was encountered ( $D = 56^\circ$ ,  $I = 64^\circ$ ,  $a_{95} = 7$ ,  $k = 62$ ,  $n = 8$  localities). The best clustering after partial tectonic correction reveals its synfolding age. It represents, most probably a Late Cretaceous remagnetization which took place during the pre-Senonian thrusting about 90 Ma. The inclination is about  $10^\circ$  steeper than that expected for the southern margin of the European Platform. This might indicate that the rocks dipped gently to the south during the remagnetization event (now they are tilted  $30\text{--}70^\circ$  to the north). The same overprint had been previously described also from the Tatric units. These data give further constraints for the paleolatitude of the CWC in the Late Cretaceous and amount of possible rotations and/or strike-slip movements in the northern part of the area in the Tertiary.