

Paleomagnetism and low-field susceptibility of flysch rocks from the Rożnów area of Silesian nappe

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Paleomagnetic study of flysch units of the fragment of Silesian Nappe in the central part of outer Western Carpathian Mts (Poland) has been undertaken to examine the possible rotations of the nappe (or its parts) on the regional and the local scale. The 10 localities chosen near the Rożnów Lake represent sedimentary strata of the continuous time span: from the Upper Cretaceous to the Oligocene. The analysis of anisotropy of magnetic susceptibility revealed that it depends mainly on the matrix minerals, as the axes of K_{\min} (after bedding correction) cluster perpendicularly to the bedding plane and the axes of K_{\max} (abc) indicate the distribution close to the regional paleocurrent direction (from the west to the east) — for each locality.

The small clockwise and counterclockwise rotations of the successive thrusts of Silesian Nappe (in which lie the studied outcrops) have been observed on both sides of the long, sinistral fault Witowice–Czchów, thanks the comparison of azimuths

of K_{\max} with the regional direction of paleotransport (W–E). The primary NRM direction (after conducting the thermal or AF demagnetization) has not been preserved in the studied rocks, due to the deep mineralogical changes of magnetic minerals, probably by weathering processes.

The recent component of RM of ChRM type arose after the last orogenic phase of this part of Outer Carpathian Mts, i.e. after the Late Miocene. The mean direction of RM before tectonic correction (calculated for the all studied localities) and with the mentioned small corrections connected with anticipated rotations along the fault – ($D = 348^\circ$, $I = 62^\circ$) has the best statistical parameters. The same mean direction of RM calculated after bedding correction has much more worse statistical parameters. The RM (bbc) still differs around 20° from the **expected**, recent direction of RM for this part of Europe in the time span from 0 to 7 Ma ago ($D = 7^\circ$, $I = 63^\circ$). Probably, among the observed mainly recent directions (lying in the I quarter of the net) a part of them belongs to the artefacts (and has the magnetic declinations in the IV quarter).

The farther study should be concentrated on those rocks which could preserve the primary directions of RM and on the enrichment of the collection to improve the statistics of obtained data.