

***A new paleomagnetic and anisotropy of magnetic susceptibility study  
on Late Cretaceous red marls from the Pieniny Klippen Belt  
(Poland and Slovakia)***

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The Pieniny Klippen Belt (PKB) is a 600km long, strongly tectonized narrow zone of arcuated shape which separates the Inner and the Outer Carpathians. It is composed of several successions of deep and shallow water limestones of Early Jurassic–Late Cretaceous age.

The Pieniny Klippen Basin probably opened during Pliesbachian – Aalenian time, forming a part of global system related to the opening of the Alpine Tethys. The sedimentary history of the basin is connected to three tectonic/sedimentary events reflected by oxygen-reduced dark terrigenous deposits of Early–Early Mid Jurassic age, by Mid Jurassic–Earliest Cretaceous crinoideal, nodular or cherty limestones and radiolarites and by Late Cretaceous pelagic marls and/or flyschoid deposits. The Pieniny Klippen basin was closed at the Cretaceous-Tertiary boundary and the Mesozoic successions were detached and thrust towards the present day north.

The width of the thrust and fold belt was strongly reduced by Early Miocene transpression/transension and pervasive brittle faulting affecting sequences of rheologically variable strata of diverse palaeogeographic and tectonic affiliations and resulted in the present block in matrix structure.

From this tectonically complicated belt we collected Late Cretaceous red marls at 13 localities. The laboratory experiments have so far been carried out on samples from five localities. The results open a perspective, since they are coherent, and at some localities even the magnetization of pre-folding age were identified. While it is too early to draw conclusions about the mechanism leading to the present day geometry of the Klippen Belt, our results which represent the northern and eastern segments of the Belt document a general counterclockwise rotation.

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