



Palaeomagnetism of Middle Oxfordian limestones from the Kraków Upland (Poland) - primary record or Cenozoic overprint?

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Palaeomagnetic and rockmagnetic studies were carried out in the eastern part of the Krakow Upland in the Mlynka quarry (N 50°06', E 19°41'). A total of 17 individually oriented hand samples of Middle Oxfordian (Plicatilis and Transversarium Zones) grey limestones show multicomponent remanent magnetization with magnetite and maghemite as the main magnetic carriers. The low-blocking temperature component S of normal polarity is considered as of secondary, probably chemical origin, due to weathering processes which took place in the Paleogene (transition of magnetite into maghemite). The high-blocking temperature component P shows reversed polarity and reveals inclinations of $67^\circ \pm 5^\circ$. The calculated palaeolatitude of $N 49^\circ \pm 5^\circ$ is not similar to that expected for the European Craton in the Middle Jurassic ($N 36^\circ \pm 4^\circ$) (Kadzialko-Hofmokl, Kruczyk 1987), although reliable Late Jurassic data does not exist. Rockmagnetic studies, including the Lowrie test, MicroMagTM, SEM, EDX, WDX and XRD investigations, show a detrital and probably biogenic origin of single domain magnetite, which is the main magnetic carrier of the high temperature, reversed polarity component P. This implies a primary origin of this component.

The presented results suggest a relatively fast (*ca.* 16 cm/y) northward drift of the European Craton between the Callovian and Middle Oxfordian. This corresponds well to the opening of a new Alpine domain of the Tethys Ocean (see Lewandowski et al. 2005, 2006; Matyja, Wierzbowski 2006).

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