

Magnetic Mineralogy and Paleomagnetism of Serpentinized Ultramafic Rocks from the Braszowice–Brzeźnica Fragment of Sudetic Paleozoic Ophiolite

Magdalena KĄDZIAŁKO-HOFMOKL¹, Maria JELEŃSKA¹,
Katarzyna DELURA², and Paweł BYLINA³

¹Institute of Geophysics, Polish Academy of Sciences, Warsaw, Poland
e-mails: magdahof@igf.edu.pl; bogna@igf.edu.pl

²Faculty of Geology, Warsaw University, Warsaw, Poland, e-mail: k.delura@uw.edu.pl

³Faculty of Geodesy and Cartography, Warsaw University of Technology,
Warsaw, Poland, e-mail: pawel.bylina@interia.eu

A b s t r a c t

Complex paleomagnetic, rock-magnetic and mineralogical studies were performed on serpentinized ultramafic rocks from Braszowice–Brzeźnica massif (BB) situated at the southern extremity of the Niemcza Shear Zone, close to the Sudetic Marginal Fault. Studies of magnetic minerals revealed presence of several varieties of magnetite grains, and partly altered Cr-spinels. Paleomagnetic studies revealed stable component HS of natural remanence carried by magnetite formed probably during the initial serpentinization. The directions of HS have good grouping within each locality, but differ between localities. Studies of anisotropy of magnetic susceptibility (AMS) have shown that directions of anisotropy axes are steep instead of horizontal as is common within the Niemcza Shear Zone. Taking advantage of the directions of AMS we rotated the directions of HS and brought them to the reference direction for the Sudetes for 372 Ma. We suggest that after acquiring AMS and HS during the Upper Devonian, the BB became divided into multiple units due to tectonic activity in the region.

Key words: Sudetes, Paleozoic, ophiolite, serpentinized ultramafic rocks, tectonic rotations.