

## **Abstract**

Fabric of sedimentary rocks can be studied by the analysis of magnetic properties, especially by magnetic anisotropy. Anisotropy of magnetic susceptibility (AMS) is a relatively easy and quick method capable to recognize the rock fabric (primary or secondary). The results of AMS are strongly dependent on magnetic properties of rock-forming minerals and their preferred orientation. The preferred orientation of grains develops by sedimentation, post-depositional diagenetic processes and eventually by tectonic deformation, which can totally overprint the primary structure in some cases. I applied AMS to study the magnetic fabric of fine-grained lacustrine sedimentary rocks from 9 different beds of Vrchlabí section, situated in the northern part of the Krkonoše Piedmont Basin. Paramagnetic minerals dominate the magnetic susceptibility, with possible small amount of ferromagnetic phases of some iron oxides. Most of the samples are laminated mudstones and they have depositional magnetic fabric carried by flat grains of clay minerals deposited horizontally from suspension. Carbonate bed shows signs of inverse magnetic fabric, which is in accordance to magnetocrystalline anisotropy of calcite. Magnetic fabric of early tectonic overprint, probably present in some black shale and siltstone beds, may be related to the late basin deformations. The microscopy of oriented polished sections and X-Ray diffraction analysis would be useful to better understand the magnetic carriers of studied rocks.