# Abstract

The studied area is located in the Náměšť granulite masiff on the top of the Gföhl unit, the uppermost part of the Moldanubian nappe stack, which is composed of high grade metamorphic rocks. The Náměšť granulite masiff contains high pressure felsic granulites which enclose numerous bodies of strongly serpentinized spinel peridotites and is rimmed by a belt of garnet amphibolites. The Mohelno peridotite is a folded slab of upper mantle lherzolites, which crops out in length of about 5 km and width up to 1 km. All lithologies in the studiea area were strongly affected by the Variscan orogenesis, during which they were juxtaposed and metamorphosed in the Moldanubian lower crust, then they were exhumed and thrusted over the other, less metamorphosed Moldanubian nappe units. Subsequently, all the Moldanubian nappe stack was thrust over the Moravicum, the peripheral part of the Brunia microcontinent. This work is focused on different generations of fabrics in the Mohelno peridotite, surrounding granulites and amphibolites and their comparison. Three generations of fabrics were recognized in granulites and amphobolites. In the Mohelno peridotite, the strong serpentinization obliterated most of the original fabrics. Magnetic properties and anisotropy of rock and lattice preferred orientations in relics of olivine were measured in order to decipher the original fabrics and interpret it in terms of the tectonic history. The oldest fabric in peridotites are the bands of pyroxenites, which represent the mantle magmatic fabric. In interior of the Mohelno peridotite body, linear LPO fabrics were measured. These fabrics were most likely formed during deformation of upper mantle prior to emplacement of peridotite slab into the lower crust. The emplacement took place during the stage of the maximal thickening of the Moldanubian crust (~340 Ma) simultaneously with formation of S1 and L1 fabrics in granulites, or shortly after that, during exhumation of the granulites and. formation of S2 and L2 fabrics. The slab of upper mantle rocks was thrust into the granulites along a shear zone. On the inner margin of the peridotite body, planar LPO fabrics were measured, which were probably formed by simple shear deformation at this shear zone. Subsequently the peridotite body was deformed together with the granulites and amphibolites during rapid exhumation, forced by indentation of Brunia into the Moldanubian crust. The peridotite was bent and boudinaged like a rigid slab

inside the less viscous quartzofeldspathic rocks. The finite shape of the body is a fold hinge with a reduced limbs and a fold axis plunging steeply to the west. Paralelism of the S2 fabric, measured in granulites, with the shape of the fold suggest their common formation during exhumation of the granulite massif. In the late stage of exhumation, deformation took place along the flat shear zones S3 in granulites and amphibolites. After termination of deformation in the surrounding rocks, the Mohelno peridotite went through intensive polyphase serpentinization in static conditions, during which a dominant serpentinite fabrics were formed in peridotites. The serpentinite fabrics are partially inherited after the older fabric in olivine. The growth of magnetite and other cubic ferromagnetic minerals, which form agregates elongated paralel to Ss, was also asociated with the serpentinization. The magnetic fabric in peridotite is dependent on shape preferred orientation of magnetite and hence on the serpentinite fabric.