

**Seismic anisotropy of the lithosphere around the Trans-European Suture Zone (TESZ) based on joint analysis of body-wave data of the TOR experiment.**

PLOMEROVA, J., KOUBA, D., VECSEY, L., BABUSKA, V. and TOR Working Group, Geophysical Institute, Czech Academy of Sciences, Prague, Czech Republic

The Trans-European Suture Zone (TESZ) is the most prominent tectonic boundary within Europe separating mobile Phanerozoic terranes in the western part from the Precambrian East-European Platform in the eastern part. Distinct changes of seismic anisotropy of the mantle lithosphere are related to this intra-continental suture. The effect is observable in various wavelengths as well as seismic wave types. In the long-period range, the radial anisotropy of surface waves differs distinctly in the lithosphere on both sides of the TESZ. In the short-period range of body waves, the P residual spheres detected changes in the lithospheric anisotropy related the various blocks on both sides of the TESZ as well. A passive teleseismic field experiment -TOR- traversing the northern part of the TESZ in Germany, Denmark and Sweden was conducted during 1996-1997. The array recorded data for teleseismic tomography of the upper mantle with a high lateral resolution, about few tens of km, including data for seismic anisotropy studies. Our analysis of shear-wave data recorded at broad-band stations aims at retrieving a 3D orientation of anisotropy around the TESZ and mapping lateral changes of anisotropic structures along the TOR antenna. An interpretation of the observed seismic anisotropy by the preferred orientation of olivine crystals results in a model of blocks of the mantle lithosphere characterized by anisotropic structures plunging in different directions relative to this major suture zone and extending through the whole lithosphere.