

STRUCTURE OF THE EARTH'S CRUST ALONG CEL01 SEISMIC PROFILE IN THE AREA FROM EEC THROUGH CARPATHIANS TO PANNONIAN BASIN

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Key words: CELEBRATION 2000, deep seismic sounding, Carpathians, TESZ

New deep seismic sounding experiment (DSS) CELEBRATION 2000, was made in June 2000. It targeted the structure and evolution of major tectonic features in the Trans-European Suture Zone (TESZ), as well as the southwestern portion of the East European craton, the Carpathians, the Pannonian basin, and the Bohemian massif. Profile C01, about 900 km long, crosses the SW margin of the east European Craton, TESZ, Carpathians and reaches the Pannonian basin. The profile was recorded using 22 shot points and geophone spacing of 3-3.5 km.

Acquired seismic data were modelled initially by tomographic inversion of first arrivals, then using forward modelling of all phases with SEIS83 package.

Obtained preliminary 2-D model of P-wave velocity shows large contrasts in lithosphere structure along the study area. In the EEC, the crystalline basement was found at depths of 1-5 km. In the TESZ area, the depth of the consolidated basement with a P-wave velocity of about 5.8 km/s, reaches 8 - 10 km and low velocities < 6.0 km/s continue down to 15-20 km. The basement depth in Pannonian basin is 3-5 km. At 650 km distance, in the area of Lublin unit at the SE margin of the EEC, anomalously high velocities of about 7.0 km/s were found at depth of 20 km. The depth of Moho boundary varies along the profile from 30-35 km in the Pannonian basin area, 45-50 under the Carpathians and the TESZ to 40-45 km under the EEC