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The crustal structure of South-Eastern Europe in the new European Plate reference model

Irene Molinari (1), Andrea Morelli (1), Victor Raileanu (2), and Dragos Tataru (2)

(1) Istituto Nazionale di Geofisica e Vulcanologia, Bologna, Bologna, Italy (molinari@bo.ingv.it), (2) National Institute for Earth Physics, Bucuresti-Magurele, Romania

The new European Plate crustal model (EPcrust) represents a continental-scale, a priori, compilation of current knowledge on the structure of the upper layers of the earth, designed as a large-scale reference for further seismological studies.
Here we review some of the contributions used, and test and compare the model in detail for the Carpathians-Pannonian region with orogene, platform and basin structures (Hungary, Romania), Black Sea, Balkan area (Bulgaria, Greece and Turkey) and the western margin of the East European Platform (Ukraina). We specifically address thickness of sediments, Moho depth and Vp in upper and lower crust, and run comparisons with local compilations and individual studies mostly deriving from analysis of active source experiments. Among the most notable features in this region are Moho depths below the Carpathians range, generally between 32 and 37 km (but with some reported values as high as 45 km), and consolidated sediments in the Black Sea reaching thickness from 3 to 12 km. We compare maps and profiles based on the EPcrust model (cristalline basement and Moho surfaces) along great-circle cross-sections across the major tectonic structures in the SE Europe such as Pannonian-Carpathians system, with extension to the E in the East European Platform, from Balkans to the Black Sea or in the south from Greece towards Turkey. Along the profiles the local crustal parameters are mentioned as they were provided by local studies in each area.