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1.2-P11. Lithosphere -asthenosphere system in the Balkan Peninsula region

Velocity structure of the lithosphere-astenosphere system, to the depth of 350 km is obtained for the region of the Balkan Peninsula for the cells sized 1 degree by 1 degree. The models are obtained by the following sequence of methods and tools: surface-wave dispersion measurements and collection; 2D tomography of dispersion relations; non-linear inversion of cellular dispersion relations; smoothing optimization method to select a preferred model for each cell. The 3D velocity model, that satisfies Occam razor principle, is obtained as a juxtaposition of selected cellular models. The distribution of seismicity and other geophysical information is used as independent constraints for the definition of the crustal and lithospheric thickness. The obtained picture of the lithosphere-asthenosphere system for the Balkan Peninsula region confirms a strongly heterogeneous structure of the crust and mantle. The moment tensor inversion of few recent damaging earthquakes which occurred in the Balkan Peninsula region is performed through a powerful non-linear technique and obtained solutions are related to the different rheologic-mechanic properties of the Earth's structure.

Primary author: RAYKOVA, Reneta Blagoeva (Sofia University Kliment Ohridski)

Presenter: RAYKOVA, Reneta Blagoeva (Sofia University Kliment Ohridski)

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