A synthesis of old and new seismic crustal data in the Romanian sector of the Moesian Platform

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Moesian Platform is an old massif in the SE Europe bordered to the N and W by the South Carpathians, to the S of the Balkans, to the E by the Black Sea and to the NE by the North Dobrogean Orogen and Scythian Platform.
In the Romanian sector, to the N of the Danube river, the topography of platform shows elevations rarely exceeding 200 m. Basement of platform is divided by the Intramoesian Fault in two different sectors both in age and in composition: the Wallachian sector to the W and the Dobrudgean sector to the E. Two fault systems cut the platform: one is parallel to the Carpathians and accommodates the sinking of platform under orogen and the other is relatively transverse to the first, separating a succession of fault blocks. Sedimentary cover has a variable thickness from a few hundred meters to 10 km or more in the Focsani basin. Crust is thinner in the S, about 30 km and thicker in the N of platform down to 40-45 km.
Crustal investigation of platform was accomplished in two stages: first stage in the 1970' years as a few large angle seismic crustal lines were recorded in the E and W part of the platform and after 1990 as both near-vertical (reflection) and large angle (Vrancea99 and Vrancea2001)crustal lines covered the whole platform. A new stage was starting recently using the data provided by seismological broad band stations. Punctual crustal information was added applying the receiver function and surface wave techniques.
An inventory of the old and new crustal data allowed us to review the old crustal model and to create a new improved one. The new model comprises a more detailed topography of the surfaces of Moho and top of lower crust across of platform. The top of basement was mapped in the last decade using seismic and well data. The new crustal model provides as well a distribution of the mean P-wave velocities within the upper and lower crystalline crust in the whole platform. The new model displays mean P-wave velocities of 5.9-6.4 km/s in upper crystalline crust and 6.6-7.0 km/s in lower crust. The depth of Moho is variable from 30 km in S to 45 km in NE. The top of the lower crust is from 13 km to 30 km depth.