

عنوان مقاله:

Crustal velocity structure of Binalud region using teleseismic P wave receiver functions

محل انتشار:

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تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

The crustal structure beneath three seismic stations, deployed in temporary Kopet-Dagh (KD) seismic network, in north eastern of Iran is determined using receiver functions analysis. In this study , 40 teleseismic earthquakes that were recorded at the stations of KD network were used to calculate receiver functions. By combining the radial component of teleseismic P waves with the vertical component, it is possible to identify S phase within the P waveform. These phases are generated by the mechanism of P to S conversion at discontinuities in velocity under the receiving station. Crustal structure models can be tested by receiver functions generated of synthetic seismograms and comparing with the observed data. A complicated crustal structure is suggested for the Binalud, with a Moho depth of 52 ± 1 km The results are presenting the three main layers: The upper crust has a S wave velocity between 2.6–3.6 km/s and a 13 ± 1 km thickness. The middle crust has S wave velocity between 3.2– 3.9 km/s and a 21 ± 1 km thickness. The lower crust has S wave velocity between 3.6 – 4.6 km/s and a 18 ± 1 km thickness. The upper crust is divided to two parts. Top layer has a positive shear wave velocity gradient from 2.6- 3.6 km/s from surface to a depth of 7 ± 1 and bottom layer has a negative shear wave velocity gradient from 3.6- 3.2 km/s and 5km thickness. The middle crust also is divided to two parts. Top layer of middle crust has 9 ± 1 km thickness and a 3.2-3.3 km/s shear wave velocity. Bottom layer of middle crust has 12 ± 1 km thickness and 3.4-3.9 km/s shear wave velocity. A S wave .velocity between 4.6– 4.7 km/s indicates the lower crust with Moho at 52 ± 1 km

کلمات کلیدی:

North-east of Iran, Binalud, Crustal structure, Moho discontinuity, receiver function, P waves

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