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Distribution of the crustal thickness and Vp/Vs ratio in Xinjiang region, China

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Using the teleseismic waveform data recorded by 72 permanent digital seismic stations from Xinjiang seismograph network, we investigated the crustal thickness and Vp/Vs ratio beneath each station by the grid search and stacking method of receiver function. The result shows two characteristics in the crustal structure.
(1) Strong lateral crustal thickness variations exists in Xinjiang region. The crustal thickness about between 38 to 69 km , the average thickness is about 50km in Xinjiang region. The crustal thickness about are 40$\sim$ 50 km in the Tarim basin. The crustal thickness about are 38 $\sim$ 50 km in the Junggar basin, the crustal thickness about are 46 $\sim$ 51 km in the basin-mountain junction area, The crustal thickness gradually deepens to 55km from the basin-mountain junction to the Tianshan Mountain piedmont. The depth changes of the crustal thickness may indicated the basin subducted into the Tianshan Mountains.
(2) The crustal Vp/Vs ratio in the Xinjiang region changes significantly (about from 1.63 to 1.92), which suggests that the complexity of the composition of the crust material and significant inhomogeneous structure. The wave velocity ratio of different block has obvious segmentation characteristics. The mean ratio is 1.80, which is close to the global continental average, which is higher than that of the continental crust in China.

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