



Imaging crustal thickening in the transition zone between northeastern Tibet and Ordos basin by a dense short-period seismic array

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The deformation model in the transition zone between the plateau and craton is a key problem to help us to understanding how the plateau growth outward and how the craton stop the plateau expansion. We carried a dense short-period seismic array across the northern Tibetan plateau, the Ordos basin and their transition zone. Receiver functions are calculated from the waveform of teleseismic events and used to image the crustal structure. Our results show that the crust of the craton consist of upper and lower crust, while there are three layers in the crust of the plateau. In the transition zone, the upper and middle crust of the plateau is overthrusting eastwards upon the top of the ordos upper crust, resulting the uplift of Liupanshan Mountain, the lower crust of the plateau is shortening to deepen the Moho beneath the transition zone. In contrast, the crustal deformation of the Ordos is neglectable.