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The Moho structure beneath the tension area of the central Tibet by teleseismic P wave receiver functions

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The Tibetan Plateau, with a crustal thickness twice of the normal thickness and an average elevation of 5km, is generated by the continental-continental collision between the India and Eurasian plates as well as the subsequent convergence. The central Tibet filled with a large quantity of normal faults and eastward escaped conjugated strike-slip faults which represent the tension function is thought to be a deformation crush zone between the colliding plates. In order to understand the relationship between the deep structure of the plateau and the surface texture evolution and to build the connection of the subduction of the India plate and shallow surface response, we build 53 broadband seismic stations around the Bangong-Nujiang Suture (named SANDWICH). In this paper, we calculate 3851 high signal-to-noise receiver functions of teleseismic P wave from the SANDWICH broad-band waveforms, and obtain the images of Moho structure of 7 profiles using the common conversion points time to depth migration. Our results show that the average crustal thickness of the central Tibet is 60-70km and crustal thickness of the south of the Bangong-Nujiang Suture is thicker than that of the north. Besides, this part of the plateau is divided into several blocks with different crustal thickness by the normal faults, eastward escaped conjugated strike-slip faults and the Bangong-Nujiang Suture despite the surface is flat which implying that there are some relationships between the deep offset and the shallow faults .We also find the negative amplitude in the depth of 20km around, which probably be the interface of the brittle upper crust and the ductile middle crust. Based on the result, we are willing to investigate how the surface faults tension and the deep tension are connected through the ductile middle crust.