

Seismic structure under Tibet derived from teleseismic data recorded by portable seismic networks

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Tibetan plateau has been formed by the collision between the Indian continent and Asia about 55 Ma. Many studies has been performed in the last century, however, structure under this region still remains unknown.

In the present study, we have collected a large number of teleseismic P-wave arrival data recorded by portable seismic networks (INDEPTH) in Tibet to study the heterogeneous structure of the crust and upper mantle under the region. The new data we collected in this study is 4896 P arrivals from 207 events. And we performed the teleseismic tomography of Zhao et al. (1994) using relative travel time residuals from these data.

In our results, the high-velocity anomalies, which reflect the effects of Indian lithosphere, are revealed under the Lhasa terrane in the depth from 100 ~ 200 km and subduct downward from BNS (Bangong & Nuijiang Suture) . On the other hands, the low-velocity anomalies appear under Qiangtang terrane in the depth from 100 ~ 200 km.

These images are consistent with the thin lithosphere model.