A Big Earth Data Platform for Three Poles

**Shear-wave Velocities in the D” Layer beneath the Indian-Eurasian Plate Collision Zone (2009-2018)**

1、Description

We use waveform cross-correlation to analyze the recordings of eight earthquakes (2009-2018) beneath the Indian Ocean at stations from the Chinese Digital Seismic Network. We obtain 929 high quality residual traveltime differences between the phases ScS and S (Differential traveltimes.dat). We interpret variations of δt up to 10 seconds as due to horizontal shear-velocity variations in D” beneath northern India, Nepal, and southwestern China. The shear velocity can vary by as much as 7% over distances shorter than 300 km. Our observations provide additional observational evidence that compositional heterogeneity and possibly melt contribute to the seismic structure of the lower mantle characterized by long-term subduction and mantle downwelling.

2、Keywords

Theme：ScS-S differential traveltimes,Tectonics,Seismology,Shear velocity,D" layer  
Discipline：Solid earth  
Places：Indian-Eurasian plate collision zone  
Time：2009-2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.03MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.0 | - |
| west：65.0 | - | east：90.0 |
| - | south：15.0 | - |

5、Time frame:2009-01-06 00:00:00+00:00--2019-01-05 00:00:00+00:00

6、Reference method

References to data:

LI Guohui, BAI Ling. Shear-wave Velocities in the D” Layer beneath the Indian-Eurasian Plate Collision Zone (2009-2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Geo.tpdc.2703692020

References to articles:

7、Supporting project information

National Natural Science Foundation of China  
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8、Data resource provider

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