Crustal structure and deformation of the SE Tibetan plateau revealed by receiver function data

Presenter: Sun, Yuan-Cheng

Abstract

Three methods are used for estimating crustal structure and deformation beneath the southeast margin of the Tibetan plateau and its surrounding areas. The methods includes an estimate of azimuthal anisotropy of S-wave with a horizontal axis by harmonic analysis; fast polarization direction and splitting time by a joint analysis of radial and transverse receiver function data; Moho depth and Vp/Vs ratio by H-ĸ stacking. And from our observations here are consistent with the scenario that the SE Tibet has been built by lower crustal flow, they also suggest that the mantle lithosphere beneath the margin may have been mechanically decoupled from the upper crust.

References

Clark, M.k., Royden, L.H., 2000. Topographic ooze: building the eastern margin of Tibet by lower crustal flow. Geology 28,703-706.

Lev, E., M.D., van der Hilst, R.D., 2006. Seismic anisotropy in Eastern Tibet from shear wave splitting reveals changes in lithospheric deformation. Earth Planet. Sci. Lett. 251, 293-304.

Sun, Y., Niu, F., Liu, H., Chen, Y., Liu, J.,2012 Crustal structure and deformation of the SE Tibetan plateau revealed by receiver function data. Earth and Planetary Science Letters 349-350, 186-197, <http://dx.doi.org/10.1016/j.epsl.2012.07.007>

Liu, H., Niu, F., 2012.Estimating crustal seismic anisotropy with a joint analysis of radial and transverse receiver function data. Geophys. J. Int. 188, 144-164, <http://dx.doi.org/10.1111/j.1365-246X.2011.05249.x>.