Crustal deformation of the northeastern margin of Tibetan Plateau: a combination of the ductile flow and fault-controlled strain

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Through the application of harmonic analysis to a new dense teleseismic data set in the northeastern margin of Tibetan Plateau, we are able to determine the orientation of anisotropy in the upper and lower crust. Upper crustal anisotropy was measured at 18 stations with the fast direction from N32˚E to N169˚E, which is mainly controlled by local strain. However, in the lower crust, mid/lower crustal flow is probably the main origin of anisotropy, which was measured at 11 stations trending N34˚E to N158˚E. The crustal deformation model of the northeastern margin of Tibetan Plateau can be interpreted as a combination of the fault-controlled strain field and mid/lower crustal flow.

Acknowledgements
We would like to thank everyone involved in instrumentation preparation and field work. This study was supported by China National Special Fund for Earthquake Scientific Research in Public Interest (Grant No. 201008001, 201308011). Waveform data for this study are provided by Data Management Centre of China National Seismic Network at Institute of Geophysics, China Earthquake Administration (SEISDMC, doi:10.11998/SeisDmc/SN).

Keywords: Tibetan Plateau, Crustal anisotropy, Crutal flow

