

Global-phase seismic interferometry unveils P-wave reflectivity below the Himalayas and Tibet

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A number of seismic methods exist to image the lithosphere below a collection of receivers, using distant earthquakes. In the current practice, especially mode-conversions in teleseismic phases are utilized. We present a new method that takes advantage of the availability of global phases. This method is called global-phase seismic interferometry (GloPSI). With GloPSI, zero-offset reflections are extracted from reverberations near the array caused by global seismicity. We exemplify GloPSI with data from the Hi-CLIMB experiment (2002-2005) and migrate the obtained reflection responses. This results in a 800 km long reflectivity profile through the Himalayas and a large part of the Tibetan Plateau. All the major tectonic features are imaged in detail.