



Constraining the Moho depth below Bhutan with global-phase seismic interferometry

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We use a novel technique named Global-Phase Seismic Interferometry (GloPSI, Ruigrok and Wapenaar, 2012) to image the lithospheric structure, and in particular the Moho, below the two parallel north-south transects belonging to the GANSSER network (2013-2014, doi:10.12686/sed/networks/xa), which are crossing the Himalayan orogenic wedge in Bhutan.

GloPSI makes use of reverberations from distant earthquakes with near vertical incidence. These reflections are isolated in the continuous records by solving a correlation integral and turned into a reflectivity image of the lithosphere below the arrays. Taking into account the primary velocity information from an ambient noise tomography (Singer et al. 2017a), we can better constrain the depth migration. Our preliminary results favorably compare with the first order features observed from a previous study of receiver functions (Singer et al. 2017b).

References:

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- Singer, J., Kissling, E., Diehl, T., & Hetényi, G. (2017b). The underthrusting Indian crust and its role in collision dynamics of the Eastern Himalaya in Bhutan: Insights from receiver function imaging. *Journal of Geophysical Research: Solid Earth*, 122(2), 1152-1178.