



AGU FALL MEETING

San Francisco | 14 – 18 December 2015

S34B-03: Reflection imaging of the Moho and the aseismic Nazca slab in the Malargüe region with global-phase seismic interferometry

Wednesday, 16 December 2015

16:30 - 16:45

📍 Moscone South - 307

A number of passive seismic methods have been developed over many decades. Still, imaging of aseismical zones of the subducting slabs is one of challenging themes in the geoscience community. Conventional seismological approaches, such as hypocentral mapping, receiver functions, and global tomography, have been providing useful imaging of the Nazca slab, which subducts under the South American plate; however, the aseismic zones remained unclear. Here, we propose to apply global-phase seismic interferometry (GloPSI) for the imaging of the aseismic zones of the Nazca slab beneath the Malargüe region (Mendoza, Argentina). GloPSI uses global phases (epicentral distances $\geq 120^\circ$) such as *PKP*, *PKiKP*, and *PKIKP*, recorded on the vertical component of the seismic sensors. These phases illuminate the lithosphere below the receivers with small angles of incidence, which illumination suffices for creating virtual sources that radiate primarily downwards. We then migrate the retrieved virtual responses to obtain a subsurface reflection image with high resolution (< 15 km in depth). We use data recorded in the Malargüe region using an exploration-type receiver array called MalARRgue. This array was recording continuously in 2012 for one year. In this presentation, we show the imaging results from the Moho down to the aseismic Nazca slab, including the upper mantle.

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