

Institut für Geophysik
Geophysikalisches Kolloquium
Sommersemester 2020

Montag, 13. Juli 2020

Dr. Morvarid Saki

Institute for Geophysics, University of Münster, Germany

**Strong topography of the mid-mantle reflector beneath the
Northern Atlantic**

We investigate the seismic structure of the mid-mantle beneath the North Atlantic using PP and SS underside reflections off a potential mid-mantle reflector. A large data set of source-receiver combinations have been used in order to collect a number of reflection points beneath our investigation area. We analyzed over 2600 seismograms from earthquakes with $MW \geq 5.8$ using array seismic methods to improve the visibility of the reflected signals. The measured time lag between PP/SS arrivals and their corresponding precursors on robust stacks are used to estimate the depth of the reflector. Our results reveal the presence of mid-mantle reflectors beneath the North Atlantic within the depth range of ~ 700 to 1300 km which are consistent for both P and S wave observations. The reflectors' depths show a variation of shallower depths beneath the southern part of the investigation area to deeper values towards the northern part of the North Atlantic. Measuring the polarity and amplitudes of mid-mantle reflected waves with respect to the main phase indicates a velocity increase over the reflector for most cases. The area where the reflector changes depth generates variations in the waveforms, which we confirm by 3D waveform modelling.

Das Kolloquium findet um **16 Uhr c.t.** als Zoom-Videokonferenz statt. Der Link dazu wird auf der Homepage und per eMail rechtzeitig mitgeteilt.
Alle an dem Thema Interessierten sind hierzu herzlich eingeladen.

Die Dozenten des Instituts für Geophysik