

Institut für Geophysik  
Geophysikalisches Kolloquium  
Sommersemester 2021

Montag, 17. Mai 2021

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**Zooming in on the roots of mantle plumes at the core-mantle boundary**

Ultra-low velocity zones (ULVZs) are anomalous patches of extremely slow seismic velocities - reduced up to 30% for shear waves- discovered on the boundary between the Earth's core and mantle. Mapping of ULVZs is done with various seismic phases that reflect, refract, and diffract on the core-mantle boundary, and a compilation of all previous studies shows the patchy nature of where ULVZs are detected (Yu and Garnero 2017). Only a small number of studies have constrained the full dimensions of these zones using core-diffracted phases, and find extremely widespread zones beneath the Hawaiian (Cottaar and Romanowicz, 2012), Icelandic (Yuan and Romanowicz, 2017), and Samoan hotspots (Thorne et al., 2013). These zones are suggestive of a separate category of mega-ULVZ underlying the roots of major hotspots. In my talk I will show evidence for a mega-ULVZ underlying the Galapagos, and new constraints on the internal structure of the Hawaiian mega-ULVZ. I will also discuss the potential of deep mantle partial melting to create ULVZs.

Collaborators: Zhi Li, Jennifer Jenkins, Carl Martin, Juliane Dannberg, Robert Myhill, Rene Gassmoeller

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