Institut für Geophysik

Geophysikalisches Kolloquium
Sommersemester 2020

Montag, 29. Juni 2020

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Understanding polarities of D" reflections

The lowermost mantle has been shown to be a complex region, with seismic structures ranging from 10s of km to 1000s of km. One important is the D" discontinuity, which is located around 300 km above the core-mantle boundary and in many models features a velocity increase. Recent work has shown that this discontinuity reflects waves that seem to exhibit P-wave polarities opposite to those expected for a velocity increase, but for S-waves the polarities are the same as expected for a velocity increase. One possibility to explain this observation would be the presence of post-perovskite, which has been shown to have a velocity decrease for P-waves while for S-wave velocities there is an increase. The observation of polarities varying with azimuth then lead to a possibility of anisotropy (due to alignment of post-perovskite) as an explanation. Here we find that the ratio of Vs to Vp (R-value) is an important factor for the polarity of P- and S-wave reflections off D". We search a suite of mineral physics models to understand which component could be responsible for this high R-value. Using LDA and applying statistics to the model parameters, we find that Fe content and MgO seem to be important whereas temperature has little or no effect.

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