

Institut für Geophysik

Geophysikalisches Kolloquium  
Wintersemester 2021/22

Montag, 10. Januar 2022

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**On the origin of partial melt at the lithosphere-asthenosphere  
boundary**

In the last decade, marine geophysical observations have discovered thin channels at the base of the oceanic lithosphere with anomalous physical properties that likely require the presence of partial melt. However, mantle melts are buoyant and should migrate towards the surface rather than accumulate at the base of the lithosphere. To demonstrate that melt is indeed uniquely required to explain these observations, I will present a synthesis of magnetotelluric, seismic, geochemical, and seafloor drilling data from the Cocos plate. This synthesis documents multiple episodes of intraplate volcanism and constrains the tectonic history for the past 25 million years—going all the way back to the fission of the Farallon plate that birthed the Cocos plate. The results not only confirm the presence of partial melts, but also implicate the Galápagos hotspot as the origin, suggesting mantle melts can persist in the asthenosphere for tens of millions of years.

Das Kolloquium findet um **16 Uhr** 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