

Institut für Geophysik
Geophysikalisches Kolloquium
Sommersemester 2020

Montag, 21. Juni 2021

Dr. Darcy Cordell

**School of Earth and Atmospheric Sciences
Georgia Institute of Technology, Atlanta, GA, USA**

**Estimating magma reservoir conditions at silicic systems using
magnetotellurics: Case study from the Laguna del Maule Volcanic
Field, central Chile**

Silicic magma systems are responsible for the largest and most destructive volcanic eruptions on Earth. Questions remain about how silicic magma accumulates and the storage conditions underground. Understanding the size of modern-day reservoirs and the current magma storage conditions has implications for future eruptive activity. The Laguna del Maule volcanic field (LdMVF), central Chile has experienced significant upward ground deformation since 2007 suggesting the presence of a restless magmatic system at depth. Broadband magnetotelluric (MT) data were collected at the LdMVF between 2009 and 2016 and these data were inverted to create a 3-D electrical resistivity model of the subsurface. A significant magma reservoir in the mid-crust (>10 km depth) is imaged to the north of the LdMVF and suggests lateral movement of magma from the mid-crust to the upper crustal reservoir associated with ongoing deformation. Integrating seismic and gravity models suggests a complex trans-crustal magma plumbing system containing regions of high melt fraction magma embedded within regions of more long-lived mush. Further work with 1-D Bayesian inversions are used to better elucidate uncertainties in melt fraction estimates beneath the LdMVF.

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