

## Constraining the 3-D electrical resistivity beneath the Hovsgol and Darhad region, northern Mongolia

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### SUMMARY

In late 2022, 79 magnetotelluric (MT) measurements were acquired across the Hovsgol and Darhad region, in northern Mongolia, consisting of an array (200 km by 200 km) and several denser profiles (~10 km site spacing). Currently, little is known about the subsurface structure of the Hovsgol and Darhad region. However, it is an important region because it represents the transition from the thin lithosphere, thick crust, and high plateau of central Mongolia to the south to the thick lithosphere of the Siberian Craton to the north. The region contains three parallel, seismically-active, rift valleys, oriented approximately north-south only ~100 km south of the Siberian Craton and ~200 km west of the Baikal rift zone. This change in the style of crustal deformation from compression, as compared to central Mongolia, is very intriguing. Meanwhile, petrological studies indicate that Cenozoic magmatic activity in the region may possibly be related to that in the Hangai. Further MT measurements have been acquired across the Siberian craton west of Lake Baikal (i.e., to the north). The data will provide constraints for geodynamic modelling on the lithospheric architecture of the region, with respect to, for example, edge-driven convection in the mantle due to the edge of the Siberian Craton. In this presentation, we report on a new 3-D electrical resistivity model of the Hovsgol and Darhad region, northern Mongolia.

**Keywords:** Magnetotellurics; Electrical Resistivity; Inversion; Lithosphere; Tectonics

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