

# Conductivity Distribution Beneath the San Pedro-Linzor Volcanic Chain, North Chile, Using 3-D Magnetotelluric Modeling

Mancini, Renzo

Díaz, Daniel

Brasse, Heinrich

Godoy, Benigno

Hernández, María José

A magnetotelluric study was carried out in the San Pedro-Linzor volcanic chain, North Chile, to identify possible magmatic structures and hydrothermal systems associated with volcanoes of Holocene activity, considering previous petrochemical studies pointing to crystallization depths of approximately 8 km. Three-dimensional resistivity models based on magnetotellurics data of the San Pedro-Linzor volcanic chain were obtained based on broadband data measured in 2017 and 2018, in addition to long-period data measured in 1990s. The three-dimensional modeling shows two low-resistivity zones (less than 10  $\Omega\text{m}$ ) interpreted as partially molten areas below the Chao Dome and the Paniri volcano, and a shallower low resistivity area (less than 5  $\Omega\text{m}$ ) in the Turi Basin, an active hydrothermal system to the southwest of the volcanic chain.