

Thermal structure of the Trans-Mexican Volcanic Belt, Mexico

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Mexico, positioned at the southern tip of North America, is at the transition between the San Andreas strike-slip fault and the subduction zone that runs along Central and South America to the west, and at the border of the Gulf of Mexico to the east. As a result, the volcanic activity is concentrated in the Gulf of California and the Trans-Mexican Volcanic Belt (TMVB). The work on heat flow recently presented by Prol-Ledesma et al. (2019) shows very high values concentrated around the Gulf of California and in the TMVB. In this work, we will concentrate on the TMVB as it has a high geothermal potential and comprises the largest cities in Mexico. We will invert existing temperature data to study the thermal structure of the TMVB and apprehend the impact of punctual heat sources, magmatic intrusions related to volcanic activity, and wider scale lithospheric and crustal variation. It is of great interest to identify possible new geothermal resources in the TMVB, as only two major geothermal fields are exploited in this densely populated area.