



Preliminary estimation of the thermal structure of the Acoculco-Los Humeros area, Mexico

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Acoculco and Los Humeros are two volcanic systems geographically located the state of Puebla, north east of Mexico City. Geologically positioned at the eastern end of the Trans-Mexican Volcanic Belt (TMVB), a volcanic arc with an east-west elongation that runs from the Pacific Ocean to the Gulf of Mexico. The two volcanic systems are characterised by a caldera with a complex history and are separated by an exhumed system of the basement. Both sites are of interest for geothermal energy and while Los Humeros has a mature development, Acoculco is a green field.

In this work, we investigate the thermal structure of the area by using forward modelling methodology that considers the geometry of the volcanic systems, basement, and crust as well as the magmatic intrusion and hydrothermal systems. The aim of the thermal model is to identify and comprehend how the different geological components affect the heat budget by producing heat or transmitting heat.

The purpose is to better understand the geothermal system for further development of geothermal energy in the area.