# Geothermal Map of Peru

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Heat flow maps represent an important geophysical tool for understanding the earth's thermal regimes. For any given location, the surface heat flow ($mW/m^2$) is calculated by multiplying the geothermal gradient (°C/km) by the thermal conductivity (W/m/K) at that location. Though heat flow itself cannot be directly measured, geothermal gradients are measured in boreholes using a wire-line high-precision thermometer. Thermal conductivities are measured from rock samples using a divided-bar thermal-conductivitymeasuring device.

The "Geothermal Map of Peru" project aims to create a heat flow map of Peru using data and rock samples from oil, gas, water-well, and mining boreholes. The map will not only quantify Peru's geothermal energy potential, it will also serve as an important exploration tool for the oil, gas, and mining sectors, as it will aid in the determination of kerogen maturation and the potential identification of new mineral belts for each industry, respectively.

Furthermore, the thermal regimes illustrated by this completed work will significantly advance the understanding of the mechanisms behind volcanic gaps and their formation. Volcanic gaps are areas on active subduction zones that do not exhibit arc-volcanism. The Peruvian Volcanic Gap is the world's largest volcanic gap, spanning ~1,500 km. Although theories exist that seek to explain the mechanisms behind the Peruvian Volcanic Gap, the "Geothermal Map of Peru" will provide the necessary information to quantitatively address the problem.