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Use of Geoelectrical Methods to Image Geothermal Systems

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We use geoelectrical methods to investigate two hydrothermal fields associated with volcanoes in Italy (Vulcano and Stromboli) and the hydrothermal system associated with the hot springs of Mount Princeton in Central Colorado. In both cases, we will demonstrate how large scale DC resistivity tomography and self-potential tomography can be used to determine the fluid flow pattern and the extent of the hydrothermal system. Such type of information are crucial to fill the gap between the use of geophysical methods and reactive transport models that starts to be use to model the complex interaction between fluid flow, heat transport, chemistry, and poromechanics.