



Campi Flegrei Deep Drilling Project: using borehole data to model caldera unrest

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In the framework of Campi Flegrei Deep Drilling Project, during the drilling of the pilot hole, an adapted Leak Off Test was performed inside the Campi Flegrei caldera to evaluate, before the hydraulic fracturing, the in situ permeability of shallow geothermal reservoir, along 80m of slotted casing section. In this paper we show the methods utilized to attain, within the same test, both permeability and in situ stress of shallow rocks of the caldera. This type of test can be, overall, very useful to evaluate the large scale permeability, which is a central parameter in modelling hydrothermal and volcanic processes. Furthermore, for the case of Campi Flegrei caldera, the obtained values of permeability and in situ stress provide new constraints which can be integrated into caldera unrest modelling.