



## **Determination of the energy budget of the Tarissan Pit, Soufriere de Guadeloupe**

Dominique Gibert (1,2), François Beauducel (1), Olivier Coutant (3), Olivier Crispi (1), Celine Dessert (1), Florence Nicollin (2), and Jean Vandemeulebrouck (4)

(1) IPG Paris, CNRS, (2) Université de Rennes, CNRS, (3) Université de Grenoble, CNRS, (4) Université de Savoie, CNRS

The Tarissan pit located on top of La Soufriere de Guadeloupe volcano is the major vent of La Soufriere very active geothermal system, system that had its last phreatic eruption in 1976. This pit is both the most important heat exchanger in the actual geothermal machine and the center of the activity during the last 1976 eruption. The pit whose section is approximately 120 square meters is filled by an acid lake and is a major source of fumaroles and acid vapor on the Lava dome. It shows a constant increase of acidity for the last ten years. In a general effort to better constraint the energy budget of la Soufriere geothermal system, several experiments have been conducted on the Tarissan pit to evaluate the average energy that is released by this vent. Despite the extremely difficult field conditions, the energy release of Tarissan has been estimated between 1 and 2 MW, using lake level and temperature measurements, vapor collector, etc... The presentation shows the results of these measurements and a simple model to estimate the average energy release.