

Numerical Model of volcano-hydrothermal system of White Island volcano, New Zealand

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White island volcano is one of the most active volcanoes in the world, located at the north-eastern end of the Taupo Volcanic Zone in New Zealand. In 1990s, Geological Survey of Japan and Institute of Geological & Nuclear Sciences had carried out microearthquake, self-potential (SP) and audio-magnetotelluric surveys in this volcano. The results of these geophysical data were summarized as a conceptual model of volcano-hydrothermal system at shallow depth beneath the Main Crater Floor [Nishi et al., 1999]. For more detailed discussion, numerical simulation technique has been applied to model this volcano-hydrothermal system numerically, using computer code for this hydrothermal simulation and calculation of SP, originally developed for geothermal reservoir monitoring [Ishido et al., 2005].