

Non-isothermal flow simulation of Unzen Volcano

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Magma2002 is a three-dimensional non-isothermal flow simulator. This simulator was developed to calculate the hydrothermal effect of magma reservoir to neighboring environment. This simulator was based on geothermal simulator FIGS3C (Hanano and Seth, 1995) improved to treat magma reservoir which had specific heat and fluid parameters changing with cooling process.

Authors carried out the sensitivity analysis of heat transfer and temperature distribution beneath Unzen Volcano located in Shimabara Peninsula using this simulator and compared the simulation results of heat fluxes with estimation from temperature data of wells near the volcano.