Estimation of magma reservoir structure and settlement age of Onikobe - Naruko volcano with non-isothermal flow simulation

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We estimated magma reservoir structure and settlement age under Onikobe-Naruko volcano with simulation code based upon energy and mass conservation law to research the time evolution process of heat and liquid fluid system after magma intrusion.

Magma intrusion model was follows:

(1) Under Onikobe-Naruko volcano (depth: 5-20km, parameter 1st)
(2) Spherical shape (radius: 2-6.5km, parameter 2nd)
(3) Only one magma intrusion and reservoir
(4) Analyze parameters to match the calculated thermostructure with the cutoff depth and the data of drill holes around the volcano (i.e. heat flux, measured temperature data).

According to optimization of these parameters, the magma reservoir intruded into 15km under Onikobe-Naruko volcano, and has 6.5km radius, 30 thousand years ago.

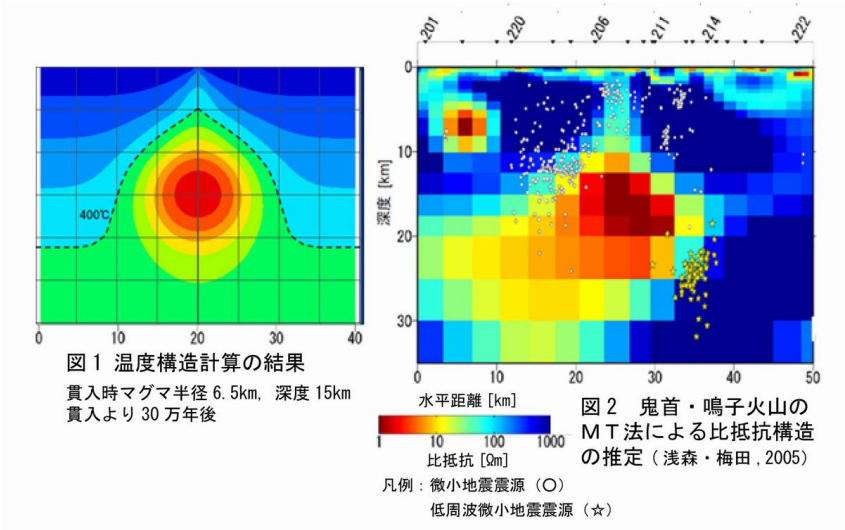

図１ 温度構造計算の結果
貫入時マグマ半径 6.5km，深度 15km
貫入より 30 万年後

図２ 鬼首・鳴子火山のＭＴ法による比抵抗構造の推定（浅森・梅田，2005）