

# Contour maps of some useful petrological parameters on Pressure-Temperature plane: A case study on Episode D' (Ogurayama lavadome) of Towada caldera, NE Japan

Isoji MIYAGI \*

## Contents of this Report:

**Towada caldera** is an active caldera volcano located (40°28'12"N 140°52'45"E) on the volcanic front of the northeastern Japan arc. To help understanding the magma plumbing system beneath Towada caldera and to prepare for the future eruptions, I report some useful petrological parameters for whole-rock compositions of Ogurayama lavadome that belongs to a post-caldera eruptive episode D' (Table 1; Kudo (2010)). Using the rhyolite MELTS program (Asimow and Ghiorso, 1998; Ghiorso and Sack, 1995; Gualda et al., 2012), a huge numbers of petrological parameters have obtained over the range of pressure from 1 atmosphere to 16 k bar with 0.1 k bar step, temperature from 700 to 1400 °C with 1 °C step, oxygen fugacity FMQ, FMQ+1, FMQ+2 log unit, and water concentration 0.1, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0 4.5, 5.0, 6.0, 8.0, and 10 wt.% H<sub>2</sub>O (combination of P, T, H<sub>2</sub>O, and fO<sub>2</sub> is about 4.7 million). The petrological parameters are summarized into a suite of contour maps on pressure-temperature plane (e.g., Fig. 1) using my PERL script and the GMT program (Wessel and Smith, 1998), and htmlized them cross-linked to develop a convenient tool.

## An example of citation:

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Table 1: Composition of the starting material (Og-5; Kudo (2010)). All the analytical figures are described in wt.%.

	Og-5
SiO <sub>2</sub>	68.98
TiO <sub>2</sub>	0.65
Al <sub>2</sub> O <sub>3</sub>	15.06
tFeO	3.68
MnO	0.12
MgO	1.07
CaO	4.33
Na <sub>2</sub> O	4.26
K <sub>2</sub> O	0.98
P <sub>2</sub> O <sub>5</sub>	0.15
Total	99.28

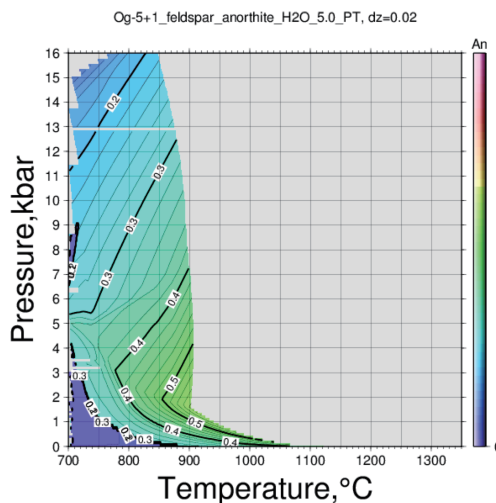


Figure 1: Contour map showing Anorthite composition of feldspar (mol fraction) equilibrium with the bulk composition of Ogurayama lavadome, a post-caldera eruptive episode D' (Table 1; Kudo (2010))

\*Geological Survey of Japan, Tsukuba Central 7, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8567, JAPAN

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