

# P-T histories of the Sambagawa metamorphic belt in the pelitic schists from the Aemigawa area, central Shikoku

# Mihoko Sonobe[1]; Mutsuko Inui[2]; Atsushi Okamoto[3]; Mitsuhiro Toriumi[4]

[1] Earth & Planetary Sci., Tokyo Univ; [2] Kokushikan Univ.; [3] Geosci, Shizuoka Univ.; [4] Complexity S and E., Univ. Tokyo

Mineral zonation is useful to investigate the P-T condition of the metamorphic belt and the tectonic process was discussed based on the derived P-T paths. Recently, quantitative P-T paths of the Sambagawa metamorphic rocks were calculated using the differential thermodynamic method (Gibbs method) (Okamoto and Toriumi, 200; Inui and Toriumi, 2002). The primary purpose of this study is to calculate the P-T paths of the Sambagawa metamorphic rocks in the Asemigawa area, applying the Gibbs method.

The Sambagawa metamorphic belt is divided into the chlorite, garnet, albite-biotite and oligoclase-biotite zones based on mineral parageneses of pelitic schists in ascending order of metamorphic grade. Asemigawa route is preferable for this study because pelitic schist is the most dominant lithofacies in this area and the route cross cut all mineral zones.

The assemblage of Grt &#8211; Chl &#8211; Mus &#8211; Pl &#8211; Ep &#8211; Cal &#8211; Qtz &#8211; Fluid ( H<sub>2</sub>O+CO<sub>2</sub> ) in the system of SiO<sub>2</sub> - Al<sub>2</sub>O<sub>3</sub> - Fe<sub>2</sub>O<sub>3</sub> &#8211; FeO &#8211; MgO &#8211; MnO &#8211; CaO - Na<sub>2</sub>O - K<sub>2</sub>O - H<sub>2</sub>O - CO<sub>2</sub> was analyzed in this study. Assuming that the assemblage was in equilibrium during the garnet growth, pressure and temperature paths can be calculated from the composition of the garnet, plagioclase and epidote. The deduced P-T paths indicate that the pressure and the temperature increased simultaneously with high dP/dT(0.4-0.5GPa/100C). The difference of dP/dT is not recognized in the three metamorphic zones.