

SMP055-P25

Room: Convention Hall

Time: May 23 17:15-18:45

Reaction and its temperature to form garnet-hornblende corona from the Lutzow-Holm Complex, East Antarctica

Takeshi Ikeda^{1*}

¹Kyushu University

Metamorphic reaction inferred from corona microstructures provides important information on pressure-temperature evolution of the rocks. However, it is not unusual that a microstructure has been explained by different reactions, which leads to different tectonic models.

This study detected a systematic compositional gradient in the corona between garnet and hornblende in ultramafic gneiss from the Lutzow-Holm Complex, East Antarctica. This feature was explained by two reactions that took place at different temperatures. The corona consists of gedrite and symplectite of orthopyroxene, plagioclase and spinel. The reaction to form only the symplectite may be described as

$\text{garnet} + \text{hornblende} = \text{orthopyroxene} + \text{spinel} + \text{plagioclase} + \text{fluid}$.

In contrast, the following reaction produces not only the symplectite but also gedrite in the corona.

$\text{garnet} + \text{hornblende} = \text{orthopyroxene} + \text{spinel} + \text{plagioclase} + \text{gedrite}$

Even though the microstructure can not judge which reaction is plausible, the distribution coefficient of Fe and Mg between orthopyroxene and spinel is significantly low at the vicinity of gedrite. This suggests that gedrite formed at lower temperature than the symplectite.

Keywords: Reaction microstructure, Garnet-hornblende corona