

Zircon U-Pb ages of metasedimentary rocks in the Hakogase (Hida Marginal) area, Fukui Prefecture.

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Combined chronological study using detrital zircon U-Pb dating and phengite K-Ar dating enables to understand the tectonic evolution of the high P/T metamorphic belt. The youngest age of detrital zircon U-Pb ages of psamites in the Hida marginal metamorphic rocks (HMMR = Renge belt) approximate its depositional ages (Tsutsumi et al., 2009). The closure temperature of the phengite K-Ar ages are controlled by deformation and recrystallization during exhumation of the metamorphic rocks (Itaya and Tsujimori, 2015). Therefore, the gap between the youngest age of detrital zircons and phengite K-Ar ages are the age difference between subduction and uplift of metamorphics.

The Hakogase (Nigure-gawa, Kuzuryu, Fukui Prefecture) metamorphic rocks belong to HMMR member as the olistolith in the Cretaceous Tedoru Group. It consists mainly pelites with small amount of basites and mafic gneisses. The main index mineral assemblage of metasediments are garnet + chlorite, and the phengite K-Ar ages are 287.8 - 283.6 Ma (Kunugiza et al., 2004). Relic Lawsonite was also found in the basites and psamites (Miyakawa, 1982).

The detrital Zircons U-Pb ages in the two pelites are obtained by the SHRIMP II of KBSI. The youngest U-Pb ages of detrital zircons are 307Ma. The gap of the sedimentation between uplift of the Hakogase metamorphics is estimated 20 Ma. This value means the migration speed of the HMMR metamorphic rocks are 1/10 of plate motion. This rapid migration speed is common for the high P/T metamorphic rocks.

Keywords: high P/T metamorphic rocks, Zircon U-Pb ages, Phengite K-Ar ages