

Mineralogical and petrological features of the Sanbagawa eclogites and amphibolites: pseudosection modelling

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We present a summary on the mineralogical and petrological features of eclogites and amphibolites from the Sanbagawa metamorphic belt, southwest Japan. The Sanbagawa metamorphic belt, extending over > 800 km along the southwest Japan, bounded to the north by the Ryoke belt (a Cretaceous high-temperature and low-pressure regional metamorphic belt) along the Median Tectonic Line and to the south by the Chichibu and Shimanto belts, forming the well-known paired metamorphic belts of Miyashiro (1961). The belt is composed of basic, quartzose, pelitic-psammitic schists and several eclogites and ultramafic bodies. In this study, we investigated samples from the Iratsu eclogite body and Tonaru amphibolites for detailed mineralogical, petrological, and tried to understand the metamorphic history using the pseudosection modelling. Based on petrography, eclogite samples contain porphyroblastic garnets, highly cracked and surrounded by amphibole, quartz, chlorite, and epidote. Hornblende and clinopyroxene show penetrative along-strike foliation. Mineralogically garnets are weakly zoned and Alm-rich, and the contents of Grs increase slightly from core towards rim. Amphibole is mainly hornblende and actinolite with minor barroisitic composition. Pseudosection modelling, using THERMOCALC, was applied to constrain the metamorphic P-T path. The work is in progress, but preliminary results show a prograde path for eclogites which could have possible transformed into amphibolites during retrogression.

Reference

Miyashiro, A. (1961). Evolution of metamorphic belts. *Journal of Petrology* 2, 277-311.

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