

SGL041-05

会場:203

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付加体中のペルム紀炭酸塩岩の鉛-鉛年代

Pb-Pb dating of Middle Permian carbonate rocks from an accretionary complex in Kyushu, Japan

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Pb isotope data and a resulting age are obtained on Guadalupian (Middle Permian) carbonate rocks from Kamura, N-Chichibu belt, in Kyushu. The study section is composed of the Guadalupian Iwato Formation and Lopingian Mitai Formation, spanning across the Guadalupian and Lopingian (G-L) boundary characterized by a major biotic crisis. Because the limestone in Kamura area primarily deposited on ancient mid-oceanic seamount, it does not contain any zircons or appropriate minerals for isotopic dating. Direct Pb-Pb dating of carbonate rocks provides a useful tool to constrain the age of the Middle-Upper Permian sedimentary sequence where no volcanic beds are available for isotopic dating. We analyzed 11 samples of fine-grained limestones in bulk from the Upper Iwato Formation that is constrained to the Capitanian interval (265.8-260.4 Ma), Guadalupian, by fusulines. The limestones yielded Pb-Pb isochron ages of 252 ± 24 Ma that is interpreted to date the time of early diagenesis as it correspond to the published biostratigraphic age. The data points form a reasonably good linear array, and the geologically meaningful age could be obtained for the Permian limestones as an application to the youngest limestones of the previous works, despite relatively high age uncertainties.

Keywords: Permian, Pb-Pb dating, limestone