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北西太平洋収束帯へ沈み込む太平洋プレート：火成岩沈み込み物質の特性
Incoming Pacific Plate beneath NW Pacific Subduction Zones: Igneous Variation in Subduction Inventories

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It is well known that the chemical composition of subduction zone magmas reflects chemical variation of the incoming plate materials. Sediments are one of the key components that can form the variation [e.g., Plank, 2005 Journal of Petrology]. Radiogenic isotope ratios of fluid mobile elements, such as Sr and Pb, are particularly sensitive to the subduction materials, and show that the arc magmas clearly reflect geochemical compositions of the incoming sediment and oceanic igneous crust [e.g., Kimura et al., 2010 G3]. The oceanic plate materials have been well described for the NW Pacific subduction zones and are useful for these examinations [e.g., Plank & Languir, 1992 JGR; Kelley et al., 2003 G3; Hauff et al., 2003 G3; Chauvel et al., 2009 G3]. Regional variation in the radiogenic isotopes of lavas has also been reported for NW Pacific arcs [e.g., Straub et al., 2009 NGeo; Nakamura & Iwamori, 2009 GR]. An interesting proposal was made by Straub et al. (2009) suggesting that the variation of the Pb isotopes in the igneous NW Pacific Plate affect to the along arc variation of the erupted lavas between Marianas and Kamchatka. They supposed that the radiogenic 207Pb and 208Pb in the basalts between Izu and Kurile are from a particular igneous oceanic crust of Indian MORB mantle domain in origin rather than widely distributed oceanic crust of the Pacific MORB mantle domain in origin. They correlated spatial distribution of the lavas to the age distribution of the Pacific Plate beneath the regions, which are all younger than 120Ma. The NW Pacific Plate slab was formed at the Pacific-Izanagi ridge by the easterly spreading between 180-60 Ma. The ridge began to subduct at 40?60 Ma beneath the Eurasia continent by ridge subduction [Miller et al., 1996 Nature]. Thus the chemistry, whether or not it was from Indian or Pacific mantle domain, has never been able to be examined for the slab younger than 120 Ma as it has already been subducted. Moreover, the studies on isotopic inventories of the NW Pacific Plate slab are still poor to verify the proposal. We here present Sr-Nd-Hf-Pb isotope compositions of the igneous oceanic crust from all the available ODP/IODP core samples. MORB-like basalts intruded into the Eo-Oligocene Shimanto accretionary prism at 40-60 Ma have also been analyzed in order to examine the immediate remnants from the Pacific-Izanagi ridge. The results indicate a quite uniform isotopic composition of the NW Pacific plate including the paleo-MORBs from the Pacific-Izanagi ridge precluding the proposal by Straub et al. (2009).

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