地球惑星物質科学科　第 1869 回 雑誌会

Earth and Planetary Materials Science Seminar (No. 1869)

日時：2014 年　7 月　23 日　　**Date & Time**：July 23rd　2015 13:10～15:30

場所：地学生物共通講義室　　**Room**：Earth Science & Biology Lecture Room

----------ABSTRACT----------

Presenter: Yildirim Dilek, Miami University (USA) and CNEAS, Tohoku University (Japan)

Title: Ocean–Continent Transition Zone (OCTZ) Record in Neotethyan Suture Zones

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Journal: In preparation for publication

In this talk I will present an overview of the geology, geochemistry and petrogenesis of mafic-ultramafic rock suites, which represent the lithospheric remnants of ancient ocean–continent transition zones (OCTZ) in orogenic belts. Known as "continental margin ophiolites" (CMO), the igneous stratigraphy and geochemical signatures of these rock units reflect the extent of geochemical heterogeneity, partial melting degrees, and melt evolution patterns in the continental lithospheric mantle prior to the onset of seafloor spreading in rifted margins. Basaltic rocks of the Jurassic CMOs in the External Ligurides of the Northern Apennines have N-MORB and G-MORB affinities with strong HREE/MREE depletion, and represent the products of partial melting of a heterogeneous sub-continental lithospheric mantle containing small volumes of garnet pyroxenite layers. These extrusive rocks were erupted directly on the exhumed fertile spinel lherzolites of Adria during its OCTZ evolution. Volcanic rocks of the Triassic CMOs in the Albanide-Hellenide orogenic belt are represented by calc-alkaline suites; alkaline basalts and subordinate trachybasalts, trachyandesites, and trachytes; transitional to sub-alkaline plume-type P-MORB basalts; sub-alkaline enriched, E-MORB basalts; and, sub-alkaline N-MORB basalts. Magmas of these extrusive rock associations were derived from compositionally distinct mantle sources, which were affected by previous subduction and plume events in the geological history of the region. The CMOs in the Zagros orogenic belt include metamorphosed lherzolites with gabbro and mafic dike intrusions, which show N-MORB and G-MORB affinities. Basalts and basaltic andesites making up the majority of the Zagros volcanic sequences have E-MORB and P-MORB affinities, whereas minor alkaline rocks that are composed of basalts, trachybasalts and trachytes display OIB signatures. The mantle sources of the Zagros CMOs were progressively enriched in Th and Nb. The OIB component of the mantle beneath the Zagros OCTZ was derived from previous plume events during the early Carboniferous, when Paleotethys was undergoing its rift-drift tectonics. Similar alkaline volcanic rocks also exist along the Yarlung-Zangbo Suture Zone in southern Tibet. The observed differences in the igneous stratigraphy and geochemical affinities of these Neotethyan CMOs are a result of extreme mantle heterogeneity caused by previous subduction and plume events during the Wilson Cycle evolution of the older Paleotethys. I will finish the talk with a brief discussion on the significance of our recognition of ancient OCTs in orogenic belts.

Keywords: Continental margin ophiolites; ocean – continent transition zone; magma-poor rifted margins; partial melting; N-MORB, E-MORB, P-MORB and G-MORB.