

SIT038-P16

Room: Convention Hall

Time: May 26 17:15-18:45

## Origin of ultramafic rocks in the Andaman ophiolite, India: Paleo-Indian oceanic uppermost mantle?

Tomoaki Morishita<sup>1\*</sup>, Biswajit Ghosh<sup>2</sup>

<sup>1</sup>FSO, Kanazawa Univ., <sup>2</sup>University of Calcutta

The Andaman Island is located in the central part of the Burma-Sunda-Java subduction zone. The Oceanic part of the Indian plate is subducting towards the east below the Southeast Asian Plate at the western part of the Andaman Islands (Curry, 2005 *J. Asian Earth Sci.*). A number of dismembered ophiolitic slices are exposed in the N-S trends. The ultramafic rocks in the Andaman ophiolites are subdivided into two types: ultramafic tectonites and a member of layered mafic-ultramafic cumulate (Ghosh et al., 2008 *Min. Petrol.*). Mineral chemistry of the layered ultramafic rocks, mainly consisting of dunite and harzburgites, in the Rutland Island of the south Andaman is characterized by high-Mg olivine, high-Mg-low-Al orthopyroxene and high-Cr spinel, indicating supra-subduction zone environments (Ghosh et al., 2008). On the other hand, fewer studies have been done on the ultramafic tectonites in the Andaman ophiolites.

We examined ultramafic rocks in the middle and the north Andaman Islands. The ultramafic rocks mainly consist of lherzolite with small amount of dunites (+ chromitites) and clinopyroxenites, and cut by gabbroic veins particularly in the north Andaman. In the field works, our working hypothesis is that these ultramafic rocks are an example of Paleo (probably Cretaceous age) upper mantle materials beneath the Indian Ocean. Mid-ocean ridge basalts in the Indian Ocean are well known to have isotopically distinctive signatures from those in the Pacific and Atlantic Oceans (e. g., Mahoney et al., 1989 *JGR*). The origin of such isotopic signatures is controversial. The Andaman peridotites might give us direct information on tracing the spatial and temporal variations in the Indian Oceanic mantle. In the presentation, we discuss the origin of these rocks based on petrological and mineralogical data.

Keywords: Ophiolite, Andaman, peridotite, ocean floor, Indian Ocean