



Magmatism events of the Panay Island, Center Philippine and its tectonic implications

Hsiang Lee (1), Yuan-Hsi Lee (1), Monika Walia (1), and Teresito Bacolcol (2)

(1) National Chung Cheng University, Institute of Earth and Environmental Sciences, Taiwan, (2) Philippine Institute of Volcanology and Seismology, Quezon City, Philippines

In southern end of the Manila trench Palawan continental crust collides with the Philippine Mobile belt that forms the Mindoro-Panay orogenic belts. Mindoro Island lies at the southern termination of the Manila Trench and Panay Island lies to the south of Mindoro. The Panay island can be separated into two tectonic terranes. Earlier studies have shown that eastern Panay belongs to the Philippine Mobile belt and the Antique Range, which is located on western side, is composed of deformed Eurasia continental crust. Previous studies suggest that the Mindoro-Panay orogeny started from late Early Miocene age (20-16 Ma) and ended in Pliocene. Here we use the zircon U-Pb dating to analysis the emplacement ages of the igneous rocks from Panay Island including the andesite and ophiolite. We further collect the river sands and boulders to obtain the comprehensive constraints on magmatism events to discuss the tectonic history of the Panay island.

From the western part of the island, we date the diorite, andesite and river sands which shows the magmatism events from 20-12 Ma. The gabbro and plagiogranite show consistent ages of 44-42 Ma. In eastern terrane both diabase and granite shows ca. 30 Ma age. The 44-42 Ma and 30 Ma events could be related with opening of the Celebes Sea and western subduction of Western Philippine Sea plate. Previously, it was suggested that the 20-12 Ma magmatism events (diorite, andesite, basalt) are related with collision events. Here we propose that these magmatism events resulted due to the opening of Sulu Sea basin (20-15 Ma) rather than collision. Considering the final magmatism event is dated at about 12 Ma and the oldest reset ages of zircon fission track are ca. 6-7 Ma in Mindoro island, we propose that the Mindoro-Panay collision event started from late Miocene, and it is still on going.