2014年度第14回 地質学セミナー

日時：12月3日（水）17：00～

場所：自然学系棟B215

Holocene Eruptive Evolution of Sundoro Volcano - Central Java, Indonesia

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Sundoro Volcano, Central Java (Indonesia), is located 65 km Northwest of Yogjakarta among one of densely populated in Indonesia. The volcano belongs to the Sunda arc, the volcanism of which is associated with subduction of Indo-Australian plate beneath Eurasian plate at rate of approximately 7 cm/yr. Sundoro is one of the most active volcanoes in Indonesia: 12 eruptions were reported since 1806; the latest ones occurred between 1970-1971. The earliest reports of Sundoro eruptions are very brief and allow only inferring that those eruptions were mild and mostly explosive. The Volcanological Survey of Indonesia mapped the distributions of volcanic deposits (Sukyar, R., 1992 et.al). However, this work lacked radiocarbon dating and thus only a general stratigraphic scheme for the volcano could be proposed.

Therefore, knowledge of it's eruption history is necessary for hazard evaluation, since even a small eruption would have major societal and economic consequences. Moreover, the evolution of of Sundoro provides the two possibilities for the future activity. One is that the longer the dormant period, the more voluminous will be the following eruption. Indonesia has been suffered from three caldera-forming eruptions during the last 1000 years. They started after long dormant or low activity period. The other is that the long repose period and small erupted volumes during the Holocene could be interpreted as if Sundoro represents a volcano on its final stage of activity: with time it's activity might gradually decline and the volcano became extinct. This study will also clear which case is possible in the future.

Here I report the results of the investigation of stratigraphy and grain size analysis of Sundoro (with the focus on its volcanic deposits of the Holocene age). I will also give the basic petrological and geochemical information that allows understanding the main magmatic processes involved in the evolution of Sundoro, which will contribute to evaluation of potential future activity. I made columnar sections of multiple outcrops to compare the volcanic sequence, and obtained 13 new charcoals for radiocarbon dates. As a temporary result, 2 major eruptive episodes at approximately 10 ka, and 1.1 to 1.3 ka age obtained to characterize Holocene Sundoro activity.The volcanic plumes of these eruptions were buoyant and most of the erupted products were transported in the form of pyroclastic flows. Voluminous lahars were common in the periods between the eruptions. Modern activity of the volcano includes persistent solfataric activity in the summit crater (with temperatures 150-200℃).

次回のお知らせ

日時：12月10日 17時00分～, 場所：総合研究棟B110

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