

Time-scale of uncertainty on long-term forecasting for volcanic activities in Japan

YAMAMOTO, Takahiro^{1*}, ITOH, Jun'ichi¹, MIYAGI, Isoji¹

¹Geological Survey of Japan, AIST

In the forecast of volcanic activities for geological disposal, the foundation will be to clarify the trends of the geological history for the activities that occurred in the assessment area, and to extrapolate this into the future. The Quaternary volcanoes are not distributed evenly throughout the Japan Islands, and their presences are determined by the plate arrangements. This means that the Quaternary volcanoes of the Japan Islands are most densely distributed on the volcanic front located 200~300 km away from the subduction boundary of the plates toward the plates on the landside, and there is no volcano in the fore-arc region. Also there is a significant tendency where the volcano distribution becomes sparse in the area distant from the back-arc side or area opposite the volcanic front. However, the migration history of the volcanic front differs in individual subduction-arc systems. In evaluating the volcanic activities, it is necessary to understand the conditions of magma generation that is the origin of the volcanic front, in accordance to the spatiotemporal changes of the activity region.

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