

Distant tracking of maximum pumice diameter in pumice-fall of the Tenmei eruption of Asama volcano: An attempt to draw isopleth lines of mm scale-maximum pumice diameter in the Kanto Plain

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Volcanic ash-fall reaches distant areas and has great adverse effects on human health and society. Therefore, it is important to investigate properties of volcanic ash-fall of past eruption in distant areas for volcanic hazard assessment. However, thin ash-fall deposit in a distant point is not preserved as a visible geological layer. Instead, particles of ash-fall are mixed in soil. The characteristics of distal ash-fall particles in soil is an important geological evidence to assess volcanic ash hazard and constrain modelling of volcanic ash-fall processes in distant areas. Takeuchi and Uesawa (2018, JpGU) studied the Tenmei eruption (AD1783 eruption) of Asama volcano and detected pumice particles in the topsoil at areas along ash dispersal axis with distance up to ca. 170 km in the Kanto plain, and correlated the pumice particles to the pumice-fall of Tenmei eruption. They tracked the maximum pumice diameter (MP) along the dispersal axis and obtained the MP variation with distance which can be consistently linked with the data with distance up to ca. 55 km of Minakami (1942). In this study, same soil survey has been performed in areas away from the dispersal axis to track the maximum pumice diameter (MP). The preliminary result suggests that we can draw isopleth lines of MP down to 1 mm in diameter in the middle to the southern area of the Kanto Plain. In addition, we have investigated characteristics of ash fall of Tennin eruption (AD1108 eruption), because ash dispersal areas of Tennin eruption partly overlaps those of Tenmei eruption in the northern Kanto Plain, at which pumice particles originated from the Tennin eruption are also found in topsoil. In the future analysis, we need to distinguish pumice particles from those of Tennin eruption to determine the MP of Tenmei eruption.

Keywords: volcanic ash-fall, maximum pumice size, Tenmei eruption of Asama volcano