

A proposal of an inverse analysis method for ballistic ejecta flying focusing on crater shape in phreatic eruption

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In recent years, many of the casualties has increased in sudden phreatic eruption. As its countermeasure, the experimental research on the safety of shelters for volcanic disaster prevention is being conducted. However, experimental conditions such as impact velocity of lapilli and block ejecta (ballistic ejecta), which are important in shelter design, largely depend on the experience of expert for volcanology. This is because the actual scattering behavior of the ballistic ejecta is not well understood. Therefore, in this study, we focus on the shape of the crater caused by the impact of the ballistic ejecta. We understand the characteristics of the crater shape that change depending on the impact conditions by the free fall test and the indentation test, and propose an inverse analysis method of the ballistic ejecta scattering behavior.