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SVC48-05 Room:104 Time:May 19 12:00-12:15

Imaging of the inner structure of a lava dome in Unzen, Japan and a shallow conduit in Stromboli, Italy

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The latest lava dome in Mt. Unzen was formed in the eruption from January 1991 to early 1995 and the activity was calmed down in 1995. The researchers kept to observe the eruption in this period precisely. Some of them proposed the growth model, another person proposed different model from their data. It is significant for the growth model and the landslide prediction to investigate the density structure in the lava dome. The observation of the lava dome density 2D map was performed by using cosmic-ray muon and muon detector in Unzen. The muon detector, nuclear emulsion films which has high position resolution and 0.85m2 effective area, was installed in a natural cave from early December 2010 to the end of March. The developed nuclear emulsion films has been scanned by automated muon readout system.

Stromboli is one of the Aeolian Islands, which is located at a volcanic arc north of Sicily Island Italy. 1.0m2 nuclear emulsion films was installed at the site which is 500m far from active volcanic conduit. After there month exposure, the films were developed and we started to analyze them in the beginning of April 2012. The systematic analysis of efficiency and random noise ratio estimation are performed by taking a pattern match and making a connection of muon tracks between several films. We will report the first results of Unzen and Stromboli results.

Keywords: volcano, imaging, muon radiography, Stromboli, Unzen, lava dome

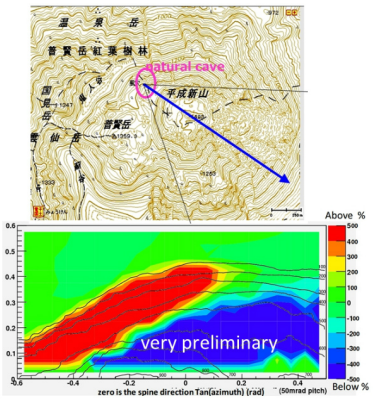

図1上：検出器設置点，方向と，溶岩ドームの位置関係．
図1下：溶岩ドームを通過するミューオン数(暫定)．

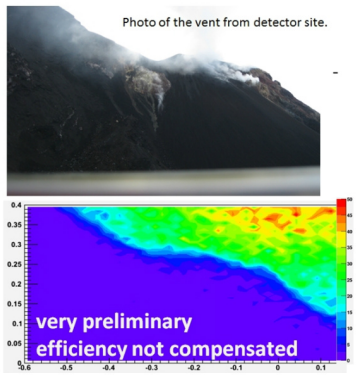

図2上：検出器設置点から見たストロンボリ火口．
図2下：ストロンボリ火道イメージング暫定結果．