



monitoring la Soufrière de Guadeloupe phreatic system with muon tomography

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Muon tomography is a novel geophysics imaging technique that measures the flux of cosmic muons crossing geological bodies. Its attenuation is directly related to their thickness and density. On la Soufrière de Guadeloupe volcano, we could extract tiny particle flux fluctuations from the tomography signal of long-term acquisitions (a few months). We prove that atmospheric fluctuations or solar activity, which are the usual candidates for cosmic particles time modulations, cannot explain these changes leaving the volcanic dome phreatic system as the only explanation. Moreover the temporal trends we extracted from the different observation axes of our instrument show a good spatial and temporal correlation with events occurring at the surface of the volcano.