



The 2011-2015 Etna lava fountains: proximal monitoring using geostationary SEVIRI measurements

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In this work the proximal monitoring of the 49 lava fountains occurred at Etna volcano from 2011 to 2015 has been realized by using the Spinning Enhanced Visible and InfraRed Imager (SEVIRI) measurements. SEVIRI, on board the geostationary Meteosat Second Generation (MSG) satellite, is a multispectral instrument with 12 channels from UltraViolet (UV) to Thermal InfraRed (TIR) and a spatial resolution of 3x3 km² at sub-satellite point. The SEVIRI data collected over the vents are used to provide time series of eruption start, duration, Time Averaged Discharge Rate (TADR) and Volcanic Plume Top Height (VPTH). The eruption start/duration and TADR are obtained from the analysis of the SEVIRI 3.9 microns radiance, while VPTH are retrieved from a simplified procedure based on the 10.8 microns channel. All the results have been validated using ground based VISible (VIS) cameras and HYSPLIT back-trajectories. The results show the general ability of SEVIRI to detect the start of the eruption few hours before the VIS cameras and a good agreement between VPTH's.