



Exploring the evolution of volcanic seismic swarms

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The goal of this study is to explore the possibility of tracking of the evolution of a magma/fluids source, by means of a quantitative stochastic modeling of earthquakes occurrence. With this purpose, we apply a nonstationary stochastic ETAS model to well known historical seismic swarms. Analyzing the background activity and the p -value evolution through time, as well as the spatio-temporal earthquake distribution, we look for coherent fluctuations of these parameters and we interpret them in terms of a magma/fluids source process that evolves through time. The results obtained suggest that suitable nonstationary ETAS modeling can be used to characterize the nature of the swarm source in almost real-time.