



On the memory of seismic noise recorded at Teide - Pico Viejo volcanic complex, Tenerife, Spain

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The volcanic complex of Teide - Pico Viejo is currently in a phase of possible reawakening that is under investigation with an increasing monitoring effort by several Spanish and international Institutions within the project TEGETEIDE. In this presentation, we investigate the seismic noise recorded during the years 2004 and 2005 in order to highlight the occurrence of possible memory effects. In fact, the behaviour of time series monitored at volcanoes do not usually show complete randomness but, on the contrary, a behaviour correlated in time, i.e. showing a certain degree memory that can be quantified using geostatistical tools such as the variogram, which was applied successfully at other active volcanoes (e.g. Stromboli, Soufrière Hills and Etna). In other words, the analysis and interpretation of the variogram allows quantifying the scale at which correlation or cross correlation occurs in the time domain. This time correlation, so-called persistence, is an important prerequisite that time series observed at active volcanoes must exhibit in the presence of precursory behaviours in order to provide valuable information for forecasting purposes.