



Monitoring the activity of Kliuchevskoi volcano through seismic noise cross-correlations

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The analysis of seismic noise cross-correlations has found great applicability in tracking temporal variations of the crustal elastic properties. In fact, as the seismic noise is continuously available, it constantly provides information on the actual state of the Earth crust. Therefore, by comparing crosscorrelation functions related to different time periods, it is possible to monitor the seismic velocity changes that affect the area under study. We present here an example of such a powerful technique performed over an exceptionally long time series of data. We retrieved velocity variations for several couples of stations operating on Kliuchevskoi volcano, over a time period of more than 10 years (from january 2000 to march 2010). The length of the time spanned by the data set allows a study of the temporal variations both at short and long scale. We interpreted the different contributions in terms of possible external/internal modulations of the volcanic system. And because of the high volcanic activity experienced by Kliuchevskoi during all this period, we could observe some clear pattern in the velocity changes that can be related to the eruption occurrences.