



Analysis of broad band seismic data acquired under the sea of Pozzuoli Gulf (Southern Italy)

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The Phlegraean Fields (Southern Italy) is one of the most active calderas in the world. With several hundred thousand people living within its borders, this places the area in high risk category from a possible eruption. The seismological monitoring system in the Phlegraean Fields is based on 8 analogue short-period seismic stations and 1 broad band digital station. While all the seismic stations are located on land, part of the seismic activity occurs in the under sea area of Pozzuoli Gulf (Phlegraean Fields) where there are no seismic stations. This gap in the data coverage produces a biased and incomplete image of the volcanic area. We have carried out an experiment in the Pozzuoli Gulf with the installation of two broad band seismic stations on the seafloor with remote and continuous acquisition for a duration of 31 days between January and March 2005. The goal of the experiment is to evaluate the performance of the seismometers and to demonstrate the feasibility of seismological monitoring by means of sea bottom receivers. The analysis of seismic data recorded during the experiment shows that the broad band seismic noise is high compared with the Peterson noise model (land model), but for periods less than 0.7s, the seismic noise on the seafloor is lower compared with recordings on land in the same period range. The last bradiseismic crisis (1982-1984) highlights the importance of this frequency range as most of the spectral content was recorded in this range.