



## **Dense microarrays for ambient noise tomography at Solfatara (Italy)**

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Imaging shallow subsurface structures and monitoring related temporal variations are two of the main tasks for modern seismology. Although many observations have reported temporal velocity changes e.g. in volcanic areas and on landslides, new methods based on passive sources like ambient seismic noise can provide accurate information on the velocity structure and on velocity changes. The success of these passive applications is explained by the fact that these methods are based on surface waves which are always present in the ambient seismic noise wave field because they are excited preferentially by superficial sources. These waves can easily be extracted because they dominate the Green's function between receivers located at the surface.

For imaging the shallow velocity structure of the Solfatara crater, one the forty volcanoes in the Campi Flegrei area characterized by an intense hydrothermal shallow activity due to the interaction of deep convection and meteoric water, we have installed a dense network of wireless seismological sensing units covering the whole surface area in the framework of the European project MED-SUV. On four consecutive days continuous recordings of the ambient seismic noise using different microarray configurations were performed. Based on a weighted inversion procedure for the passive imaging using ambient noise cross-correlations we will present a preliminary velocity model of the structure beneath Solfatara.