



New seismic array for volcano monitoring in Teide ,Tenerife (Canary Islands, Spain)

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During October 2016, a seismic array was deployed in the central part of Tenerife Island (Canary Islands, Spain), close to the Teide-Pico Viejo system. This equipment was set in the context of MultiTeide research project, whose main aim is the multiparametric study of the present level of activity in the central Tenerife volcanic complex. Until now, in addition to the seismic array, MultiTeide has installed, a magnetic network, two self-potential (geo-electrical) continuous measuring stations, two heat-flux sensors and has performed four reiterative field campaigns to measure ground temperature, CO₂ diffuse flux and self-potential in selected areas of the upper-Teide hydrothermal field.

The seismic array is located about 6 km SW of Teide's peak and has an 11-channel, 24-bit data acquisition system sampling each channel at 100 samples per second. The array is composed by 1 three-component and 8 vertical-component seismometers, distributed in a flat area with an aperture of 210 m. All the sensor are of short period. The system has two Centaur digitizers (Nanometrics) of 6 channels each, which makes a total of 12 channels. To ensure the synchronism of the set, a sensor is digitized in both stations simultaneously.

During the operating time of the array there have been more than one thousand earthquakes in the area of Tenerife, of which there have been two small swarms located in the Vilaflor area with a total of 43 earthquakes. In the present study we analyse the events of those swarms with array techniques like maximum average cross-correlation method. Based on the parameters of azimuth and apparent velocity obtained with these techniques, we compare our results with the location data of the National Seismic Network.