The Canarian Seismic Monitoring Network: design, development and first result

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Tenerife is an active volcanic island which experienced several eruptions of moderate intensity in historical times, and few explosive eruptions in the Holocene. The increasing population density and the consistent number of tourists are constantly raising the volcanic risk. In June 2016 Instituto Volcanologico de Canarias started the deployment of a seismological volcano monitoring network consisting of 15 broadband seismic stations. The network began its full operativity in November 2016. The aim of the network are both volcano monitoring and scientific research. Currently data are continuously recorded and processed in real-time. Seismograms, hypocentral parameters, statistical informations about the seismicity and other data are published on a web page. We show the technical characteristics of the network and an estimate of its detection threshold and earthquake location performances. Furthermore we present other near-real time procedures on the data: analysis of the ambient noise for determining the shallow velocity model and temporal velocity variations, detection of earthquake multiplets through massive data mining of the seismograms and automatic relocation of events through double-difference location.