

EGU2020-4796

<https://doi.org/10.5194/egusphere-egu2020-4796>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



The scholar seismic network of Tenerife: technical and scientific issues

Vidal Domínguez¹, José Barrancos^{1,2}, Luca D'Auria^{1,2}, and Nemesio M. Pérez^{1,2}

¹Instituto Volcanológico de Canarias (INVOLCAN), San Cristóbal de La Laguna, Tenerife, Spain

²Instituto Tecnológico y de Energías Renovables (ITER), Granadilla de Abona, Tenerife, Spain

Currently thousands of seismic sensors, managed by different national and international institutions, are deployed throughout the planet. In the last decades, thanks to scientific and technological advances, broadband sensors are being produced at costs affordable for most institutions that operate a seismic network. At the same time, advances in nanotechnology led to the development of MEMS sensors which allowed the development of accelerometers of very reduced dimensions and low costs. The seismic data obtained by the commercial MEMS sensors, can be sampled, synchronized, stored and transmitted through low cost microcontrollers such as RaspberryPi or Arduino. This allows the development of a complete seismic station of very small size and cost with respect to the traditional ones, although of lower sensitivity and quality.

Since 2019, Instituto Volcanológico de Canaria (INVOLCAN) is developing a low cost seismic network: the **Red Sísmica Escolar Canaria (RESECAN, Scholar Canarian Seismic Network)** with multiple purposes. The main aims of RESECAN are:

- supporting the teaching of geosciences
- promoting the scientific vocation
- strengthening the resilience of the Canarian communities by improving awareness of the Canary volcanism and the associated hazards.

The project aims at realizing and distributing low-cost stations in various educational institutions of the Canary Islands, complementing them with didactic material on the topics of seismology and volcanology. Each school will be able to access the data of its own station, as well as other centers, being able to locate some of the recorded earthquakes. The data recorded by RESECAN will be fully integrated with the data of the Red Sísmica Canaria (C7), a permanent broadband seismic network operated by INVOLCAN. This will make RESECAN also an instrument of scientific interest able to contribute effectively to the volcanic monitoring of the Canary Islands, strengthening its resilience in facing future volcanic emergencies.