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The use of infrasound monitoring in the 2022 São Jorge Island (Azores) seismovolcanic crisis

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Located in the middle of the North Atlantic Ocean, São Jorge is a volcanic island that belongs to the central group of the Azores Archipelago, Portugal. Very steep, with 54 km long and 7 km wide, São Jorge is different from all the other archipelago's islands, being itself a WNW-ESE oriented fissure volcanic system composed of four volcanic units.

Since March 19, 2022, a seismovolcanic crisis has been ongoing beneath the active Manadas Volcanic Fissure System on the western half of the island, where historical eruptions occurred in 1580 and 1808. This unrest, characterized by the occurrence of several thousands of low magnitude earthquakes and some ground deformation, is being monitored by IVAR/CIVISA teams using several techniques (seismology, geodesy, infrasound, ground water geochemistry and CO_2 and ^{222}Rn emissions).

Infrasound detections were based on data from the IMS IS42 infrasound station located on the Graciosa Island (Azores) and a portable infrasound array (SJ1) that was deployed in the northwestern part of the island at ~7 km from the main epicentral area.

We describe the actual procedures to correlate seismic and infrasonic data, based on epicentral locations and infrasound back-azimuths and the main results obtained so far.

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