

# use of a Local Infrasound Mobile Array and the International Monitoring System IS42 Station in Monitoring Seismovolcanic Crisis on São Jorge Island, Azores in 2022

*Tuesday, 20 June 2023 13:45 (15 minutes)*

The São Jorge seismovolcanic crisis in 2022 provided an opportunity to deploy a portable infrasound array (SJ1) on the island, in a collaborative work between the University of the Azores (UAz) and the University of Florence (UniFI). This four-element array became operational on 2 April 2022 firstly with a diamond geometry, and after 3 May 2022 with a centred triangular design. Therefore, SJ1 in association with the International Monitoring System infrasound station IS42, located on Graciosa Island at ~41 km distance, formed a temporary monitoring network, aiming to assist the monitoring activities related with the volcanic unrest in São Jorge Island. Both have different equipment, mainly regarding on sensor's type: SJ1 is composed of four differential pressure transducers and the signal is digitized at 100 sps, while IS42 is formed by eight absolute microbarometers rearranged into a three-element triangular small aperture within a five-element pentagonal aperture and signal digitized at 20 sps. We present here two examples of detections registered: (1) seismoacoustic signals associated to a low magnitude earthquake at São Jorge, and (2) a meteor offshore north of São Miguel Island, allowing to validate the overall detection capability and the importance of this type of solution to monitor local seismovolcanic activity.

## E-mail

maria.cn.jesus@azores.gov.pt

## Promotional text

Results of using an infrasound mobile array (SJ1) and an IMS station (IS42) in the detection capability and local monitoring of seismovolcanic activity: The case of the volcanic unrest on São Jorge Island, Azores, Portugal in 2022.

## Oral preference format

in-person

**Primary authors:** JESUS, Maria do Céu (Instituto de Investigação em Vulcanologia e Avaliação de Riscos (IVAR)); Mr MATOS, Sandro (Instituto de Investigação em Vulcanologia e Avaliação de Riscos (IVAR))

**Co-authors:** Mr BELL, Giacomo (University of Firenze (UNIFI)); Mr GHERI, Duccio (University of Firenze (UNIFI)); WALLENSTEIN, Nicolau (Instituto de Investigação em Vulcanologia e Avaliação de Riscos (IVAR)); Mr MARCHETTI, Emanuele (University of Firenze (UNIFI))

**Presenter:** JESUS, Maria do Céu (Instituto de Investigação em Vulcanologia e Avaliação de Riscos (IVAR))

**Session Classification:** O2.3 Seismoacoustic Sources in Theory and Practice

**Track Classification:** Theme 2. Events and Nuclear Test Sites: T2.3 Seismoacoustic Sources in Theory and Practice