

# Tonga-Hunga Ha'apai Eruption and Tsunami: a multi-phenomenon event

Wednesday, 21 June 2023 17:00 (1 hour)

The 15 January 2022 eruption of Hunga Tonga-Hunga Ha'apai in the Tonga Islands was unprecedented in modern times. It was one of the largest volcanic explosions of the instrumented era and ranks as the most energetic volcanic explosion on Earth since the 1883 eruption of Krakatau (Indonesia). With its ash plume reaching high altitude, an intense volcanic lightning storm, atmospheric waves circumnavigating the globe several times and associated "meteo-tsunami", and a gravity wave tsunami that travelled throughout the Pacific and was observed also in the Indian Ocean, the Atlantic Ocean and the Mediterranean Sea, it captured the attention of the global scientific community and the public. The cataclysmic eruption of Hunga Tonga Hunga Ha'apai presents a rare opportunity for researchers to explore new multi-disciplinary problems covering diverse aspects on water-magma eruption dynamics, remote monitoring of volcanoes, seismology, hydroacoustics, infrasound, satellite observations, volcanic lightning analysis, tsunami-genesis, and atmospheric impacts. It also leads the scientific community to review associated volcanic hazards including threat assessment and communication.

This panel will discuss which potential additional technologies would be useful and what progress has been made in demonstrating them.

This panel will discuss the eruption sequence, the use of IMS and non-IMS technologies and data, potential additional technologies that have been demonstrated with measurements relating to this event, lessons learned of interest for the IMS, the potential consequences on volcanic ash monitoring & tsunami detection, and the possible interest for collaboration of the CTBTO with international organizations such as World Meteorological Organization (WMO), International Civil Aviation Organization (ICAO), United Nations Office for Disaster Risk Reduction (UNDRR) and Intergovernmental Oceanographic Commission of UNESCO.

## Oral preference format

## Promotional text

## E-mail

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