SnT2023

CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

CTBTO PREPARATORY COMMISSION

Known formally as the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, the CTBTO prepares for the Treaty's entry into force and builds up the CTBT verification regime to ensure no nuclear explosion can go undetected. This includes the International Monitoring System (IMS). As the seventh event in the CTBT: Science and Technology conference series, SnT2023 brings together well over 1000 scientists, technologists, academics, students and representatives of the CTBTO's policy making organ and subsidiary bodies. It is held from 19 to 23 June 2023 in the Hofburg palace, Vienna, and online. As part of this conference, the CTBTO invites interested participants to register to this public event.

Public Event on Large Seismoacoustic Events

Hunga Tonga-Hunga Ha'apai Eruption and Tsunami: A Multi-Phenomenon Event

The 15 January 2022 eruption of the Hunga Tonga-Hunga Ha'apai volcano 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 Ocean and was observed also in the Indian Ocean,

19 TO 23 JUNE

HOFBURG PALACE, VIENNA & ONLINE

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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 multidisciplinary 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 and tsunami detection, and the possible interest for collaboration of the CTBTO with international organizations such as the World Meteorological Organization, International Civil Aviation Organization, United Nations Office for Disaster Risk Reduction and Intergovernmental Oceanographic Commission of UNESCO.

Invited talk: *Global Seismoacoustic Observations of the Remarkable Atmospheric Waves from the January 2022 Hunga Tonga-Hunga Ha'apai Volcanic Eruption*

Name	Affiliation
David Fee	University of Alaska Fairbanks, USA

Panel composition

Name	Affiliation
Shane Cronin	The University of Auckland, New Zealand
Peggy Hellweg	Seismological Society of America, USA
Stefanie Donner	Federal Institute for Geosciences and Natural Resources, Germany
Sara Barsotti	Icelandic Meteorological Office, Iceland
David Fee	University of Alaska Fairbanks, USA
Geoff Brumfiel (Moderator)	Senior Editor and Correspondent, Science at NPR

Registration: Registration is required on https://ctbto.org/SnT2023. No registration fee will be charged.
Location: The SnT2023 venue is accessible via the Heldenplatz entrance of the Hofburg Palace.