

# Science and Technology Conferences: History, Accomplishments, and Role in Supporting CTBT

A.A. Khan, I. Khalefa, O. Zhuravleva

Center for International Strategic Studies, Arab Atomic Energy Agency,  
Center for Energy and Security Studies



**Center for Energy  
and Security Studies**  
[www.ceness-russia.org](http://www.ceness-russia.org)

## INTRODUCTION AND MAIN RESULTS

This poster elaborates on the history, achievements, and impact of the Science and Technology Conferences (SnT) in bolstering the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Findings suggest that these conferences have been instrumental in enhancing the CTBT verification regime and fostering global scientific collaboration in areas relevant for the CTBT, and have potential for future development.



## Introduction

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) seeks to prohibit nuclear-weapon tests, but it has not yet entered into force, creating a need for ongoing technical review and engagement. To fill this gap, the CTBTO Preparatory Commission established the biennial Science and Technology (SnT) Conferences, beginning with the Synergies with Science symposium (2006), then ISS (2009), and rebranded as SnT in 2011. Over time SnT has grown from a technical meeting into a major international platform that links scientists, technologists, policymakers, youth and civil society. The conferences strengthen CTBT verification by advancing monitoring technologies, promoting operational readiness, and expanding inclusivity and public outreach, while also highlighting areas for improved follow-up and visibility.

## Methods & Scope

This paper examines the evolution of SnT through official reports, abstracts, and public records. It focuses on:

- Growth in participants and country representation.
- Trends in gender balance and youth engagement.
- International media coverage and outreach.
- Key scientific themes (seismology, infrasound, hydroacoustics, radionuclides, AI, on-site inspection).

## Key Findings

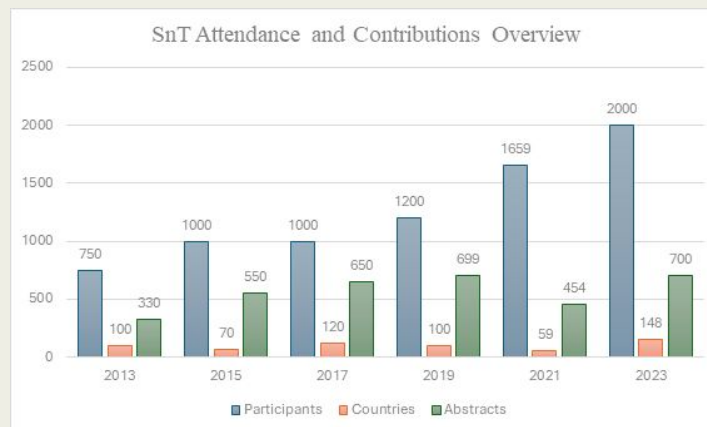
**Participation:** From several hundred in 2006 to over 2,000 participants from 148 states in 2023.

**Inclusivity:** Women's representation increased from <18% in early years to nearly 50% in 2019, though it declined slightly in 2021–23. Youth engagement grew significantly, especially through the CTBTO Youth Group.

**Geopolitical Reach:** Participation included Annex 2 states and even non-signatory states, showing SnT's role as a platform for dialogue.

**Scientific Achievements:** Advancements in monitoring systems, data analysis, and cross-disciplinary applications (e.g., disaster risk reduction, environmental monitoring).

**Outreach:** Hybrid formats expanded inclusivity, though media coverage often lagged behind the scale of the events.



Graph 1 : SnT Attendance and Contributions Overview

## Challenges & Gaps

- Limited and inconsistent media coverage compared to the scale of the events.
- Decline in women's participation after 2019.
- Uneven regional representation, with lower participation from Asia-Pacific and Africa until recently.
- Need for stronger links between conference outputs and CTBTO's long-term institutional mechanisms.

## Recommendations

**Sustain diverse participation** through targeted grants for women, youth, and underrepresented regions, especially, Annex 2 and non-signatory states.

**Enhance outreach** by strengthening global media strategies, coordinated social media campaigns, and partnerships with civil society organizations.

**Develop a collaborative online platform** to continue networking and exchange during and after conferences.

**Incorporate VR/AR** and innovative tools to engage new audiences and demonstrate CTBT technologies.

**Highlight broader civil applications** of monitoring systems (climate change, disaster risk reduction, oceanography, space science).

**Revive comprehensive reporting** to preserve institutional memory and track participation and outcomes.