SnT 2025 8 SEPTEMBER ONLINE DAY 9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

Detection of an explosion at the Kakhovka HPP dam by the Ukrainian geophysical network

LIGHTNING TALK

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- Our poster is about the detection and verification of the explosion at the Kakhovka Hydroelectric Power Plant dam on May 5, 2023, using Ukraine's National Data Center (NDC) and its geophysical monitoring systems.
- I am going to tell you why reliable event verification is a cornerstone of the CTBT regime. Demonstrating this capability, especially at the regional level, is essential for building trust, ensuring transparency, and strengthening global monitoring frameworks. The methodologies used here are directly relevant to the detection and analysis of potential nuclear tests.
- And what we did about the Kakhovka event was apply cross-disciplinary techniques, combining seismic and infrasound data from Ukrainian stations and neighboring countries. Despite challenges like low signal energy and overlapping events, we successfully isolated and characterized the explosion.
- The most important result of our work is the objective identification and localization of the event, confirmed through multi-technology analysis. This not only validates the effectiveness of Ukraine's NDC, but also showcases a methodology that can be adapted for nuclear event verification.
- If you want to find out more, come over for a chat in front of our poster - we'd be glad to discuss how these techniques contribute to the CTBT's verification mission and explore their broader applications.