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CTBT: SCIENCE AND TECHNOLOGY CONFERENCE
8 SEPTEMBER ONLINE DAY
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Air Quality Impact on the Sampling Possibilities of the IMS Radionuclide Stations

LIGHTNING TALK

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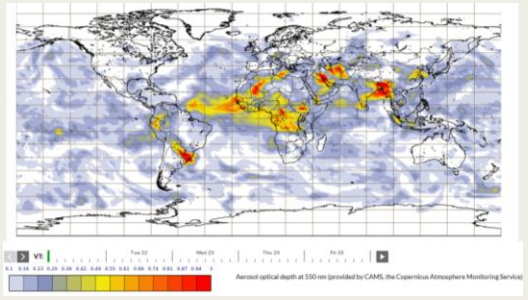
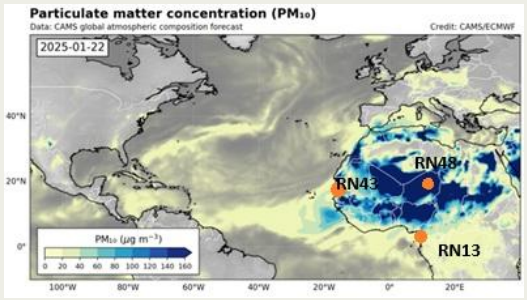
P1.1-035

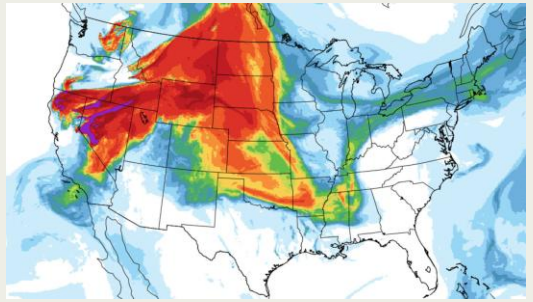
- **Our poster is about** the impact of air quality on the sampling efficiency of the International Monitoring System (IMS) radionuclide stations. These stations are crucial for verifying the Comprehensive Nuclear-Test-Ban Treaty because they detect airborne radioactive particles.

- **Why is this important?** Because poor air quality - from wildfires, desert dust, industrial emissions, or urban pollution which can clog the filters used at these stations. This reduces airflow, lowers sampling volumes, and risks obscuring radionuclide signals. In practice, this means that air pollution can interfere with global nuclear test monitoring.

- **What we did** was analyze global data from IMS stations, looking at cases where filter clogging reduced sampling efficiency. We linked these events to major air pollution sources using CTBTO's Atmospheric Transport Modeling tools.







- **The key result** is that climate-driven events like wildfires and dust storms are increasing in intensity and frequency, and they already cause measurable interruptions in IMS radionuclide sampling.

- If you want to know more, come see our poster!