Session Program

8–12 Sept 2025

CTBT: Science and Technology Conference 2025 - SnT2025

P2.3 Atmospheric and Subsurface Radionuclide Background and Dispersion

Hofburg Palace & Online
Hofburg Palace, Vienna, Austria

Wednesday 10 September

10:00

P2.3 Atmospheric and Subsurface Radionuclide Background and Dispersion: e-poster session

Poster Session | **Location:** Zeremoniensaal | **Conveners:** Ms Jana Meresova, Dr Christian Maurer

Applications in nuclear explosion monitoring using predictive source models for radioxenon discharges from nuclear facilities

Speaker
Mr Martin B. Kalinowski

Regional-Scale Air Pollution Source Identification Using Backward Particle Dynamics

Speaker
Prof. Evgeny Burnaev

Relevance of high 135Xe/133Xe isotopic activity ratios at LWRs for nuclear explosion monitoring

Speaker
Giuseppe Ottaviano

Review of data from radionuclide monitoring (RN64) station from 1 January 2010 to 31 October 2024; Insights and Recommendations

Speaker
Mr Vitus Abel Balobegwa

End-to-end numerical simulation of explosion cavity creation and circulation processes, subsurface gas venting & transport, and prompt atmospheric releases

Speaker
Mr Souheil Ezzedine

Enhancing Source Estimation in CTBTO Web-Grape

Speaker
Dr Sayed Mekhaimer

Estimation of Xe133 release from activity concentration measurements with background signal

Speaker
Mr Ondrej Tichy

The Importance of Background Analysis of Xenon in Nigeria: A Study Within 4°–14° N Latitude and 3°–14° E Longitude

Speaker
Mr Abdulmajeed Ibrahim

Improving Global Xe-133 Background Concentration Fields by Applying Nudging Techniques in FLEXPART-LCM

Speaker
Johannes Fleisch

Transport variability of Xenon and Tritium following an Underground Explosively Driven Release

Speaker
Dr Michael Foxe

CARATk, a new toolkit for radionuclides atmospheric transport simulation for the CHIMERE model

Speaker
Mr Léo Adenis

Source term analysis of 127Xe from surface and subsurface tracer transport experiments of the PE1 series

Speaker
Mr Johnathan Slack

Nudging: Making Background Predictions with Atmospheric Transport Modelling Sensitive to IMS Observations

Speaker
Mr Robin Schoemaker

Statistical analysis of nuclear power reactor outages as sources of elevated radioxenon releases

Speaker
Sepideh A. Azimi

Series of Chemical Explosive Experiments with Subsurface Noble Gas Transport and Atmospheric Releases

Speaker
Dr Michael Foxe

Improving radioxenon background estimates based on nudging observations and machine learning

Speaker
Dr Christian Maurer

Coupling condensation with decay-chains: A refined model for the calculation of the radioxenon source term produced by underground nuclear explosions

Speaker
Eric Pili

Rapid and versatile radionuclide source term estimation, including host rock seepage and atmospheric venting

Speaker
Dr Pierre Adler

Influence of routine discharges from nuclear power plants in the Florida peninsula on the radioxenon background in the northern Caribbean Sea

Speaker
Celia Angelica Caveda Ramos

Possible source location analysis of high 135Xe observations at IMS noble gas systems to test the hypothesis of light water reactors being the source

Speaker
Ms Dorice Seif

The benchmarking NORM map of Oman

Speaker
Dr Hajir Al Hamrashdi

Results of the ongoing monitoring activities at the CTBTO station in Mauritania

Speaker
Mr Mohamed Ahmed Mohamed Zeine

Comparison of Xe-133 activity concentration background in the Northern and Southern Hemispheres

Speaker
Begoña Pérez López

Temporal and Geographical Distribution of CTBT-Relevant Xenon Isotopes: Insights into Global Background Patterns

Speaker
Prof. Mohammed Yehia Taha Ahmed Elbahrawy

Source Term Analysis of Xenon (STAX): 7 Years of Hardware and Software Lessons-Learned

Speaker
Lori Metz

Creating time pattern models of radioxenon releases from nuclear facilities based on stack measurements

Speaker
Mr Martin B. Kalinowski

SATEx (Subsurface-Atmosphere Tracer Experiment): Ground truth for the atmospheric detectability of xenon emitted from an underground cavity

Speaker
Eric Pili

Determination of turbulent diffusion coefficient using atmospheric radon concentration

Speaker
Eugenia Yeboah

Modelling of dispersion of nuclear device explosion debris in the ocean

Speaker
George Nurser

Atmospheric dispersion modelling for a hypothetical nuclear accident

Speaker
Mr Kyung-Suk Suh

Temporal Trends Assessment of Atmospheric Radionuclides in Kuwait: A Long-Term Study

Speaker
Dr Mufreh S. Al-Rashidi

Exploring bounding parameters for modeling subsurface transport of radioxenon

Speaker
Dr Carolyn Seifert

Detections at Regional IMS NG Station and ATM Tracking of Possible Emission Source

Speaker
Mr Edmund Okoe Amartey

Comparative Analysis of CFD Simulations and CTBTO Monitoring Data for Radon Displacement Detection in UNE Scenarios

Speaker
Ms Afra Abdelrahman Mohammed Bakhit

Investigating unusual high-level radioxenon detection episodes at several locations of the IMS NG network: causes, origins and implications for radioxenon monitoring

Speaker
Mr Jonathan Bare

Possible source origin of cesium-137 detections at station MXP44 in 2024

Speaker
Celia Angelica Caveda Ramos

Characterization of Xenon-133 atmospheric civil source distribution using graph models on simulated data

Speaker
Dr Mounir Atiq

Extended Radionuclide Background Campaign in Pabrade, Lithuania

Speakers
Lance Lidey, Mr Michael Mayer

What's new in the German Radioxenon network

Speaker
Dr Sofia Brander

Quantification of uncertainties in atmospheric transport modelling and their application to modelling radioxenon emissions

Speaker
Susan Leadbetter

Comparison of Belgian and Dutch results from inverse ATMs for the nuclear detonation case of NPE 2024

Speaker
Michiel Bode

Cocktail-DCC method to determine radio-isotopes quantities in fall-out

Speaker
Michiel Bode

Measurements of radioxenon activities during periods of gaseous release from an Advanced Gas-cooled Reactor

Speaker
Andrew Petts

Atmospheric transport modelling analyzing source regions for recurring peak detections of radioxenon at RN38 and the Pacific

Speaker
J. Ole Ross

Detections of the short-lived 135Xe in the natural background of xenon isotopes in the soil

Speaker
Mattias Aldener

Radionuclide Isotopic Ratio Analysis at Ultra-Trace Concentration Levels for CTBT Applications

Speaker
Mr Andrius Puzas

Updated status and analysis of ongoing temporary noble gas background measurement campaign in Japan

Speaker
Mr Jonathan Bare

Attribution of the radioxenon release sources, detected by SAUNA III and three SAUNA QB networks in Lithuania

Speaker
Dr Evaldas Maceika

11:00