ID: Type: **Oral**

Transport Modelling and Radionuclide Analysis for the NPE 2015 Scenario

For practicing verification procedures and interplay between the International Data Centre (IDC) and National Data Centres, NDC prepardness exercises (NPE) are regularly performed with selected events of fictitious CTBT-violation suspicion. The German NDC's expertise for radionuclide analyses and operation of station RN33 is provided by the Federal Office for Radiation Protection (BfS) while Atmospheric Transport Modelling (ATM) for CTBT purposes is performed at the Federal Institute for Geosciences and Natural Resources (BGR) for the combination of radionuclide results with waveform evidence. The radionuclide part of the NPE 2015 scenario is tackled in a joint effort by BfS and BGR. First, the NPE 2015 spectra are analysed, fission products are identified, and respective activity concentrations are derived. Special focus is on isotopic ratios which allow for source characterization and event timing. For atmospheric backtracking the binary coincidence method is applied for the first affected samples to determine the area with high atmospheric release probability. The ATM results together with the radionuclide fingerprint are used for identification of waveform candidate events. Comparative forward simulations of atmospheric dispersion for candidate events are performed. Finally the overall consistency of various source scenarios is assessed and a fictitious government briefing on the findings is given.

Primary author: ROSS, Jens Ole (Federal Institute for Geosciences and Natural Resources (BGR))

Presenter: ROSS, Jens Ole (Federal Institute for Geosciences and Natural Resources (BGR))

Track Classification: 3. Advances in sensors, networks and processing