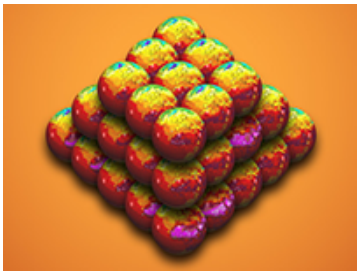

Contribution ID: **1** Type: **Oral presentation**

Quantifying uncertainties and confidence level in ATM simulations

Thursday, 6 June 2019 10:00 (30 minutes)

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) is an international organization located in Vienna, Austria. Its main task is to establish a global verification regime to monitor compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which bans all nuclear explosions. The Commission has developed an atmospheric transport modelling (ATM) pipeline working with meteorological data in order to produce source-receptor-sensitivity (SRS) field data and plots to indicate possible source regions for potential releases of radionuclides (RN) related to hypothetical or actual detections at RN stations.

CTBTO mainly uses ATM guidance in backward mode to link a measurement from an IMS station to a possible source location. However, ATM is also used in forward mode to predict which of the IMS radionuclide stations are likely to be affected given a potential radioactive release.

Different ATM systems will generally produce different solutions because a) the input meteorological fields are different or processed differently, b) the transport and dispersion model are different or configured differently, and c) the source term is specified differently. CTBTO in collaboration with Zentralanstalt für Meteorologie und Geodynamik (ZAMG), under funding from European Union Council Decisions VII, has initiated a project to study the impact of different meteorological input coming from an EPS to better estimate the source location and to quantify the level of confidence. This presentation will describe the project and present initial results.

Primary authors: BOURGOUIN, Pierre (CTBTO); Mr MAURER, Christian (ZAMG); Dr ARNOLD, Delia (ZAMG)

Presenter: Mr MAURER, Christian (ZAMG)

Session Classification: Morning session - Chair: Julia Wagemann

Track Classification: UEF2019