ID: Type: **Oral**

Use of CTBTO Measurements to Estimate Source Strengths and Atmospheric Removal Times of Radionuclides Set Free During Reactor Accidents

CTBTO radionuclide measurement data were widely used to describe the hemispheric-wide dispersion of radioactive aerosols after the nuclear accident in Fukushima in March 2011. Due to their high precision, these data are uniquely qualified for model validation. Especially the differences between the tracer-like noble gases and the aerosol-bound substances allow improved estimates of atmospheric lifetimes of aerosols. Comparison of model results with measurements provides a unique opportunity to validate and improve deposition parameterizations in models. For many ATM modellers worldwide, improvement of deposition codes will be a priority research activity for the years to come.

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Track Classification: Theme 1: The Earth as a Complex System