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The Added Value of Using the Multi Model Approach in Defining the Possible Source Region (PSR): the Fukushima Incident as Use Case

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Atmospheric transport modelling (ATM) supports the radionuclide verification technology by providing a link between radionuclide detections and the regions of their possible source. In the case of an anomalous detection registered by the International Monitoring System (IMS) particulate network classified as Level 5, CTBTO sends a request for support to Regional Specialized Meteorological Centres (RSMCs). In response, they produce and upload their own backward simulations. Taking advantage of additional models delivered by the CTBTO-WMO response system, a Multiple Model Possible Source Region (MMPSR) can be calculated. For this study, we will look at the radioactivity measurements registered in the aftermath of the Fukushima incident by the IMS network. Due to the scale of this incident, anomalous anthropogenic detections (classified as Level 5 or Level 4) and anomalous radioxenon detections (classified as Level C) were frequently observed. For the selected samples, the enhanced version of the MMPSR algorithm will be used. The added value of using not only the ensemble of ATM models, but also multiple radionuclides for the purpose of PSR calculation, will be demonstrated.

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Promotional text

How an ensemble of ATM models helps in determining the PSR when multiple radionuclides are involved: Case study of the Fukushima incident.

Oral preference format

in-person

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