

for Meteorological Uncertainty in Atmospheric Transport Models

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Atmospheric transport models (ATMs) are used to model the transport of radionuclides both to determine the origins of unknown releases and to model the background concentrations from known sources. To do this ATMs rely on meteorological information from four-dimensional numerical weather prediction (NWP) models. However, the chaotic nature of the atmosphere means that the meteorological information provided by these models is uncertain. Therefore, meteorological experts are increasingly running ensemble NWP to produce probabilistic weather forecasts. A number of studies have been carried out coupling ensemble NWP with ATMs but to date few centres produce ensemble ATM output on an operational basis (i.e. on demand in response to incidents). This work will present an approach to using ensemble NWP data using stack measurements and observations from Qb sensors from the Xenon Environmental Monitoring at Hartlepool (XENAH) collaboration to demonstrate both the benefits and challenges of coupling ensemble NWP with ATMs in an operational setting.

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Promotional text

Challenges and benefits of accounting for meteorological uncertainty in operational dispersion modelling demonstrated using emission and observation data as part of the XENAH project.

Oral preference format

in-person

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