

of the National Data Center Preparedness Exercise 2019 by Using Inverse Atmospheric Transport Modelling

Tuesday, 20 June 2023 17:25 (15 minutes)

The National Data Center Preparedness Exercise 2019 (NPE- 2019) provides an opportunity to evaluate the ability of the National Data Center (NDC) to use available International Monitoring System (IMS) data, techniques, and tools to verify compliance with the Comprehensive Nuclear-Test-Ban Treaty. In NPE-2019, there are unusual detections of radioactive particulates (Cs-134, Cs-137, La-140, and Ba-140) and noble gases (Xe-133, Xe-133m, and Xe-135) at some IMS stations. This NPE can be solved by data fusion between solutions of seismic and infrasound detections and the forward atmospheric transport modelling. However, the current work will illustrate the ability to use adjoint atmospheric transport model outputs, source-receptor sensitivity (SRS) fields from radionuclide IMS stations and the corresponding concentrations values of those multidetections to confine the source region and to estimate the source term.

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Promotional text

Source term estimation of NPE-2019 by using inverse atmospheric transport modelling.

Oral preference format

in-person

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Session Classification: O2.4 Atmospheric and Subsurface Radionuclide Background and Dispersion

Track Classification: Theme 2. Events and Nuclear Test Sites: T2.4 Atmospheric and Subsurface Radionuclide Background and Dispersion