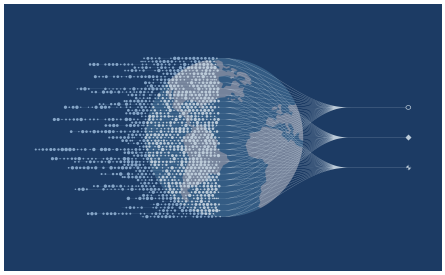

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# the source of anomalous caesium-137 detections across Europe in September 2024

In early September 2024, the particulate radionuclide IMS station in Stockholm, Sweden, observed several anomalous measurements of caesium-137. Similarly unusual detections were simultaneously being observed on national monitoring networks across Europe, and preliminary investigations suggested that the source of the fission products was somewhere in Eastern Europe. In time, it became apparent that forest fires within the Chernobyl exclusion zone had resuspended a large amount of legacy material into the atmosphere. We present a joint effort between the UK NDC and the UK Met Office in performing an analysis of the event, including the use of different atmospheric transport and dispersion models (HYSPLIT and NAME) as well as source inversion tools to reconstruct release parameters such as location, magnitude, and time. The results demonstrate the benefits of utilising multiple approaches, atmospheric transport models, meteorological data, and radionuclide analysis techniques to characterise radiological releases such as this.

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