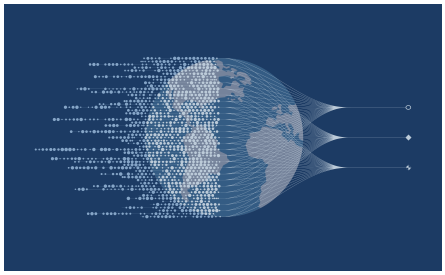

ID: **P2.3-648** Type: **E-poster**

# of radioxenon activities during periods of gaseous release from an Advanced Gas-cooled Reactor

Xenon isotopes are relevant to the monitoring regime of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). We report radioxenon measurements data taken directly at source, deriving emission inventories for International Monitoring System (IMS)-relevant isotopes and isotopic ratios used to discriminate nuclear explosions from civil emissions. Time series activity plots have been produced from both in-core monitoring and direct measurement at the point of release using a stack monitor system. Ratio plots using both data sets have been produced with results compared to a commonly-chosen nuclear explosion 'discrimination line'. We will present a comprehensive study of radioxenon emissions from an Advanced Gas-cooled Reactor (AGR) and provide valuable radioxenon measurement data from a civil nuclear power plant (NPP). The reported data provides the first estimate of annual radioxenon discharges using direct measurements for an AGR and is an important step towards creating a reactor-type specific global emission inventory for NPPs.

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Session Classification: P2.3 Atmospheric and Subsurface Radionuclide Background and Dispersion

Track Classification: Theme 2. Monitoring events and Nuclear Test Sites: T2.3 Atmospheric and Subsurface Radionuclide Background and Dispersion