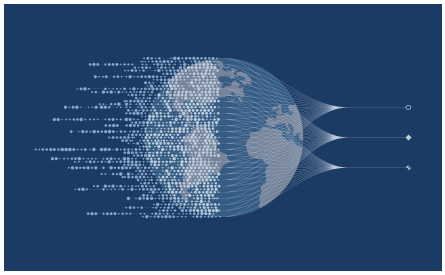

ID: **P2.3-779** Type: **E-poster**

unusual high-level radioxenon detection episodes at several locations of the IMS NG network: causes, origins and implications for radioxenon monitoring

The International Monitoring System (IMS) of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) operates a global network of stations designed to detect potential violations of the CTBT. As a critical part of this system, the noble gas (NG) network plays a major role for the monitoring of radioxenon isotopes. Recently, extended episodes of elevated concentrations of radioxenon were recorded at several IMS locations, including the IMS NG systems at Takasaki (JPX38) and Wake Island (USX77), as well as the non-IMS system at Horonobe (JPX81). These detections significantly exceeded historical levels of radioxenon at these sites, reaching up to 80mBq/m3 of Xe-133 at JPX38, and, in some instances, included all the four CTBT-relevant radioxenon isotopes. This presentation aims to explore these unusual high-level detection episodes, investigating their causes and origins, while discussing their implications for the monitoring of radioxenon.

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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