

Influence of Small-Scale Radioxenon Sources on the Background Levels at CTBT IMS Monitoring Stations

In the past, the impact of a major regional radioxenon emitter on the detections at International Monitoring System (IMS) noble gas systems were examined in two atmospheric transport (ATM) challenges. These two International challenges defined the task to predict the impact of known radioxenon releases from a strong regional source on radionuclide stations of the CTBT International Monitoring System (IMS). It has been shown that the availability of stack emission data greatly increases the capability to emulate major peaks in the detected time series. However, detections of low concentrations cannot always be explained with emissions from the major regional emitter, but rather with low emissions from numerous sources. Data from the ATM challenges of 2015 and 2016 are used to assess the overall improvement from considering not only one major emitter, but also numerous small-scale sources.

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