

Can We Use Atmospheric Radioxenon Observations Related to the Daiichi Nuclear Power Plant Accident at Fukushima to Better Understand IMS Observations?

One of the principal considerations in nuclear explosion monitoring is to consider the radioxenon isotopic ratios from each possible source and how the sources of individual radioxenon observations might be discriminated from each other. The past observations of atmospheric radioxenon made by the CTBT IMS noble gas network, specifically those from the Fukushima accident in 2011, provides the chance for deeply understanding the source characterization. Based on these observations at IMS stations and analysis at the IDC, this study tries to differentiate individual sources from the Fukushima accident, and some aspects, such as the theoretical developments in time of certain scenarios are investigated in-depth in comparison with observations. This is of particular importance for the identification of signatures from a late release of an underground nuclear test.

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Track Classification: 2. Events and Nuclear Test Sites