

of Automatic Procedures for Selecting Samples Associated with a Release Event Based on the Evolution Consistency of Isotopic Ratios

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The International Data Center (IDC) at the Comprehensive Nuclear-Test-Ban Treaty Organization routinely analyses data from radionuclide measurement stations of the International Monitoring System (IMS) in support of its mandate. The Standard Screened Radionuclide Bulletin (SSREB) is a product of the IDC that is generated for each radionuclide sample having measured concentrations of CTBT-relevant radionuclides above abnormal thresholds. In addition, States Parties can request an expert technical analysis (ETA) in which IDC experts perform an in-depth analysis of IMS data with the possibility of including additional data to produce the State Requested Methods Report (SRMR). To facilitate radionuclide ETA, automatic procedures have been developed that assist experts in sample selection and event association based on the consistency of isotopic ratio evolution utilizing measurements from multiple radionuclide samples. The implementation of automatic procedures enables experts to gain an improved understanding of release events and assists experts to more quickly produce the SRMR. Furthermore, automatic processing can identify sample sets which are used to validate new methodologies. In this presentation we will describe the algorithms developed for automatic procedures and show preliminary results. Building from these developments, we plan to improve the automatic processing algorithms to contribute to other IDC products such as the SSREB.

Promotional text

Automatic processing of radionuclide sample measurements to perform sample selection and event association will provide support to expert technical analysis and prototype future automatic processing algorithms.

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Oral preference format

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