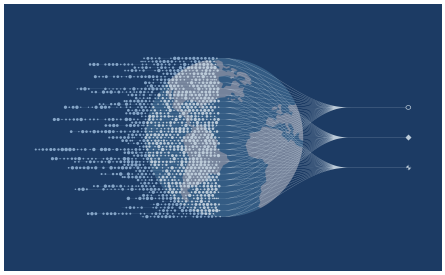

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Sensitive Measurements of Airbourne Nuclear Debris

The Comprehensive Nuclear Test-Ban Treaty (CTBT) International Monitoring System (IMS) is designed to provide a network of 80 Radionuclide detection systems, strategically positioned around the globe to detect particulate radionuclide emissions from nuclear explosions. This paper describes progress on the implementation of ultra-sensitive monitoring systems to the IMS, including the incorporation of gamma coincidence measurements into routine operations, an efficient and automated data collection/processing chain, and analysis methodologies to maximise the value of the data collected. The importance of these advances, which include significantly improved detection limits, reliability and redundancy of the Treaty measurement, and the potential for an improved (shortened) collection/measurement cycle, are also discussed.

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