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Spectroscopy in Support of Nuclear Explosion Monitoring

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The radionuclide network of the International Monitoring System (IMS), operated by the Comprehensive Nuclear-Test-Ban Treaty (CTBT) Organization, is comprised of particulate and noble gas analysis. A variety of spectroscopic techniques have been developed and are in use to identify radionuclides which may be indicative of a nuclear explosion. Ongoing efforts to increase the sensitivity of measurements and reduce detection limits have seen the development of more advanced techniques. These include gamma-gamma coincidence spectroscopy to measure low level particulate samples and high resolution beta-gamma coincidence spectroscopy for radioxenon measurements. This poster will present a review of the latest published information on spectroscopic techniques in use and being developed in support of nuclear explosion monitoring.

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Promotional text

Development of more sensitive techniques for radionuclide measurements mean it is possible to detect CTBT-relevant radionuclides at much lower activities. Such improvements in the sensitivity and selectivity of measurement systems can greatly improve the effectiveness of the IMS.

Oral preference format

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