

3.2-P03. A comparison of gamma spectrometers for airborne radiation monitoring

The measurement of gamma emitting airborne particulates collected on filters is a vital monitoring activity for both CTBTO and national radiological early warning networks. In the event of a radiological incident the measurements made by these networks must be rapidly collected, analysed and assessed. The results are then forwarded to national governments where decisions with far reaching consequences may have to be made. For this reason it is critical that the gamma measurements are as accurate and complete as possible. The gamma detectors currently used represent tried and tested technology, such as Geiger Muller tubes and NaI(Tl) scintillators. New and emerging detector technology offers the potential to improve isotope identification and quantification through improvements in energy resolution, efficiency, background reduction and detection limits. Presented is a comparison of gamma detection technologies that have the potential to improve the ability of the CTBTO and national early warning networks to monitor airborne radiation. Particular interest will be paid to coincidence measurements made with fast LaBr₃ detectors that have been used to identify radioisotopes based on 'fingerprint' gamma cascades. This work is part of the European MetroERM project, which aims to harmonise the measurement and analysis of airborne radiation following a radiological event.

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