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Automatic quality checks of the Calibration files for RN Particulate Stations

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The International Monitoring System Division (IMS) of the CTBTO aims to maximize the data availability from the radionuclide monitoring systems. The detectors at the radionuclide stations require a calibration whenever a new detector is installed or the geometry is changed.

The maintenance unit of the IMS division is responsible for assisting the Station operator during calibration, ensuring that the data quality meets the requirements and that calibration and geometry files are submitted to the PTS in a timely manner. A ROOT based software program has been developed to automatically process the spectrum, compare it against the requirements and to the calibration pairs generated at the station. Discrepancies are then flagged for correction.

The process is the following. First the certificate block is retrieved from the calibration (CALIBPHD) file. Then the peaks at the energies from the certificate block are found and fitted. The results from the fits are compared against the requirements and data pairs from the station. The peak fits as well as both efficiency and FWHM curves are plotted and tabulated.

The results displayed allow one to assess the calibration spectrum swiftly and as a result to take immediate actions as needed.

Promotional text

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