

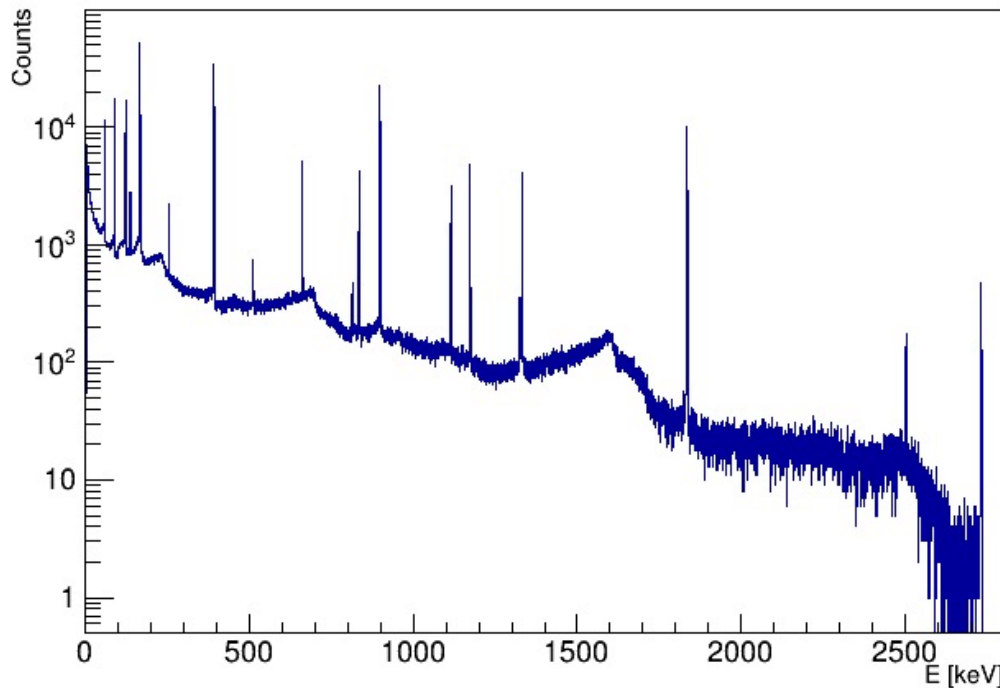


Automatic quality checks of the calibration files for RN Particulate Stations

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Poster No. P3.5-250

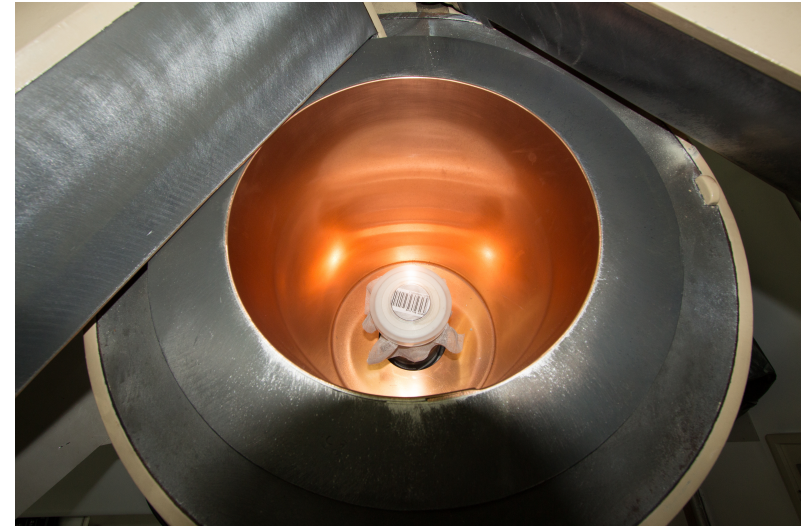


A ROOT based software program has been developed to **automatically process the spectrum, compare it against the requirements** and to the calibration pairs generated at the station. Discrepancies are then flagged for correction resulting in a **swift assessment of the calibration.**

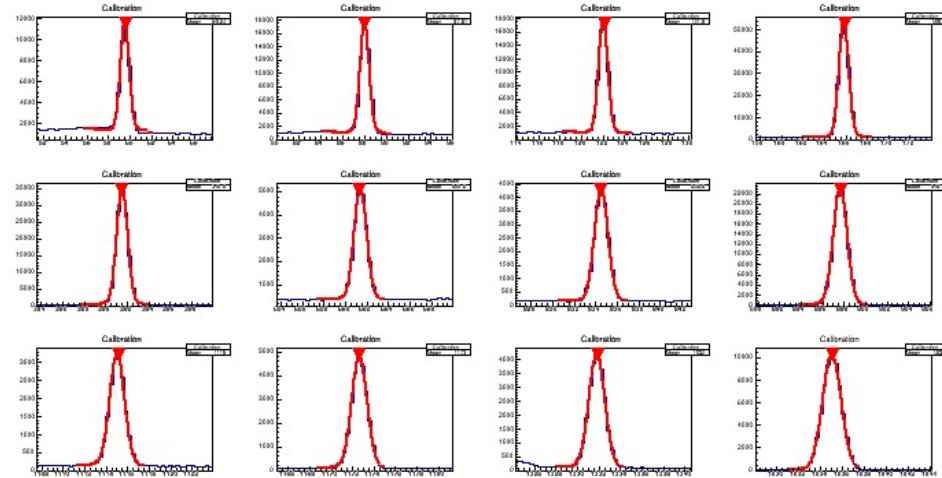


The maintenance unit of the IMS division is responsible for assisting the station operator during the **setup of a new detector as well as the calibration, ensuring that the data quality meets the requirements** and that calibration and geometry files are submitted to the PTS in a timely manner.

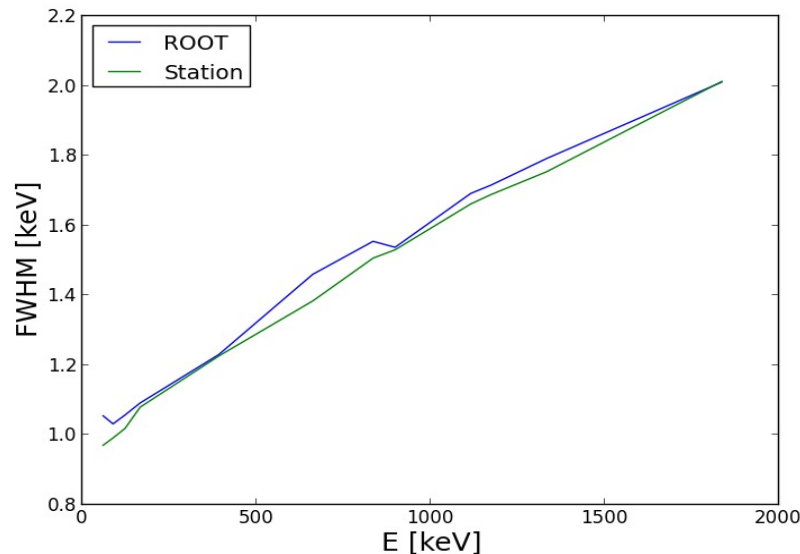
Additionally, the calibration file needs to be **compliant with the formats and protocols.**



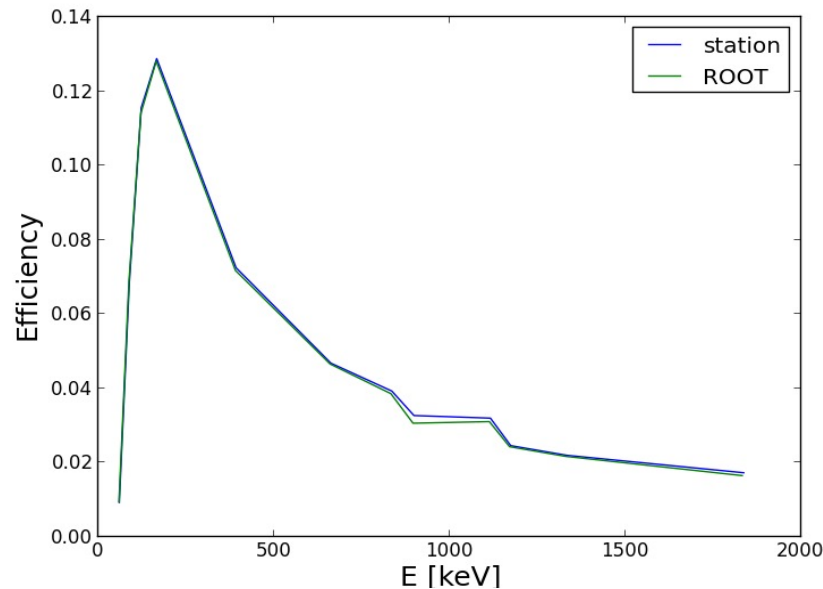
- A single **python script** is used to **perform the analysis**.
- It runs on the PTS Linux workstations.
- Receive the calibration file and parse it.
- Use the **certificate block in the calibration file to process the file**.
- Identify the peaks and **perform the fit**: position, FWHM, FWTM and the peak net area.



- **Independent peak fitting** to assess detector specifications.
- Independent assessment to be compared against the results from the station.
- Use the certificate date to calculate the source activity.
- Calculate the efficiency and **compare with station results.**
- **Display all results.**



- The quality of the detector response can be checked swiftly.
- **Easy comparison of efficiency results.**
- Statistics requirement checked to be compliant.
- Significant discrepancies in the certificate file detected by observing the shape of the efficiency curve.



- The results allow **swift calibration spectrum assessment** and immediate actions taken as needed.
- Usage has **reduced the number of iterations and response time** for detector calibrations.

