



Performance & evaluation criteria for calibration workshops & ACTRIS compatibility

ACTRIS aerosol in-situ variable: Particle number size distribution >800 nm

Responsible CAIS-ECAC units: WCCAP; PACC

Instrument type: Aerodynamic Particle Size Spectrometer (APSS)

Technical checks & calibration:

- determination of the APSS status values
- size calibration with 6 latex sizes: 600, 700, 800, 900, 1000, 2000, 5000 nm
- calibration for particle number concentration against a reference OPSS after size selection with a DMA

Criteria for evaluation:

- The latex sizing must be within 15% of the certified diameter (10% on average)
- target uncertainties for the particle number concentration against reference OPSS; for 0.8 to 1 μ m - 10% on average

Information for the user:

- regular cleaning of the nozzles
- regular flow checks (total and aerosol flow)
- sizing check with one or two sizes of Latex spheres (1000 and 3000 nm)

Literature:

- Pfeifer, S., et al. (2016). "Intercomparison of 15 Aerodynamic Particle Size Spectrometers (APS 3321): Uncertainties in Particle Sizing and Number Size Distribution." AMT 9: 1545–1551.