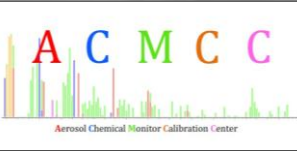


## Flagging - ITINERIS Training V

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# Data Quality Levels

## Level 0:

- Raw, annotated data directly from the instrument (native resolution).

## Level 1:

- Instrument issues removed, corrections applied, normalized to reference conditions.

## Level 2:

- Quality-controlled data, aggregated (e.g., hourly averages), with variability quantified and metadata included

## Flagging Philosophy

- Remove only data affected by instrument malfunction or contamination.
- For periods influenced by local/regional emissions or natural events, don't delete - flag them instead as valid but context-dependent
- Make sure flags allow users to filter data based on their specific purpose.

## Flagging Criteria Examples

- Instrument-level issues: broken sensors, calibration errors, unexpected noise spikes.
- Contamination events: probe icing, filter overloads, inlets blocked.
- Local/regional influences: spikes from nearby fires, industrial emissions, or sea-salt events—use context flags, not deletion.
- Outliers/spikes: data points that are statistically inconsistent, for example far beyond normal variance and likely erroneous .
- Metadata inconsistencies: missing essential metadata (e.g., calibration logs, instrument type, settings) should cause flags until resolved.

## Tools & Processes

- Use NILU's EBAS submission tool, which includes automated syntax, semantic, and sanity checks (e.g., outlier detection, metadata completeness) at submission time
- Manual review at WDCA flags items like metadata gaps, unusual measurements, or suspicious outliers.
- Feedback is returned to the station for corrections and resubmission.

# Flagging

000	valid data, no flag
111	Irregular data checked and accepted by data originator. Valid measurement
559	Unspecified contamination or local influence, but considered valid
640	Instrument internal relative humidity above 40%
999	Missing measurement, unspecified reason