

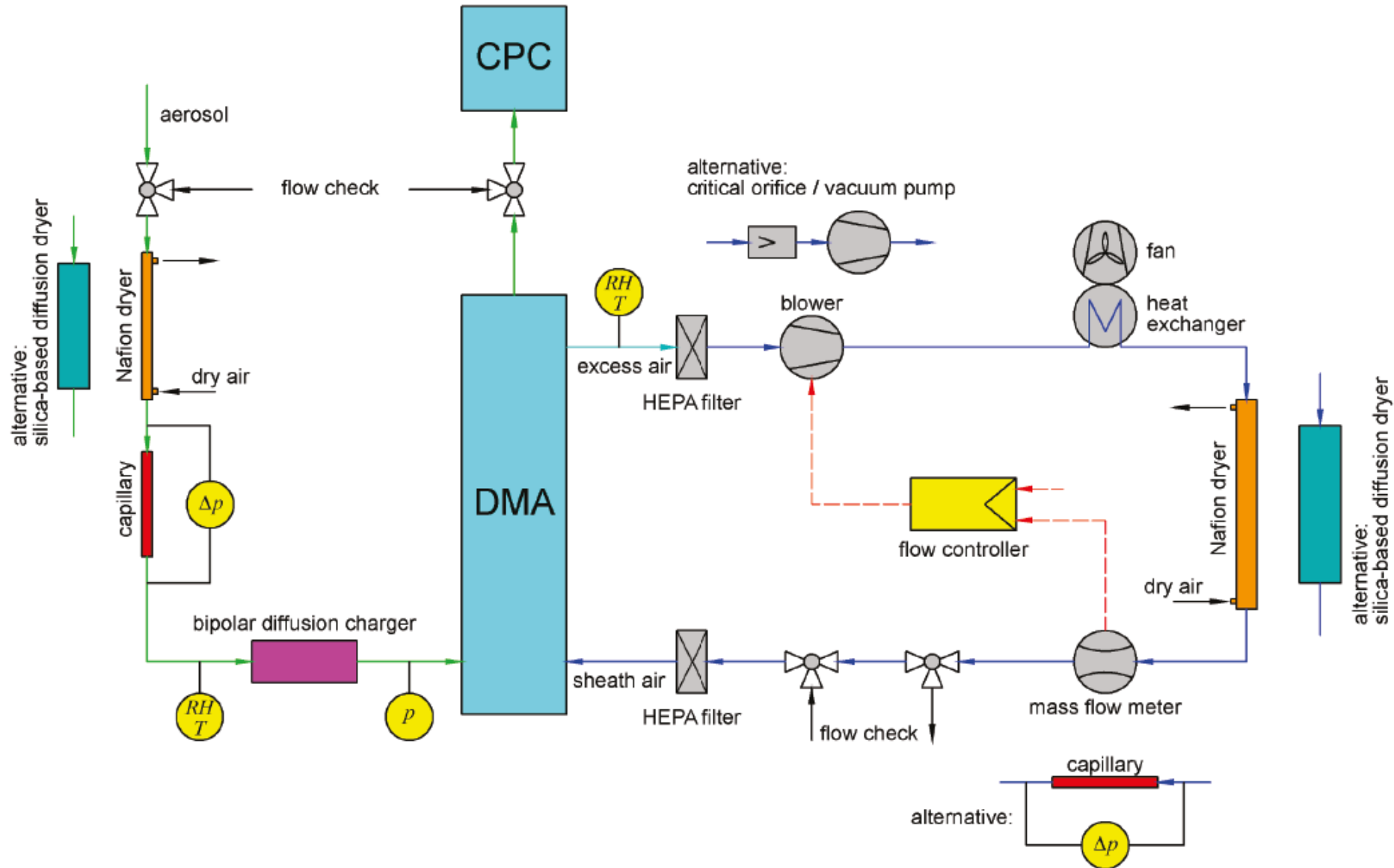
# Submission and Quality Control of MPSS Data

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Data submission workshop  
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# MPSS according to ACTRIS requirements



# Flags (valid data, with or without annotations)

- Group 0: Valid data

Flag	Validity	Description
000	V	Valid measurements

- Group 1: Exception flags for accepted, irregular data

Flag	Validity	Description
110	V	Episode data checked and accepted by data originator. Valid measurement

- Group 5: Chemical problem

Flag	Validity	Description
559	V	Unspecified contamination or local influence, but considered valid

- Group 6: Mechanical or instrumental problem

Flag	Validity	Description
640	V	Instrument internal relative humidity above 40%

# Flags 2 (invalid data)

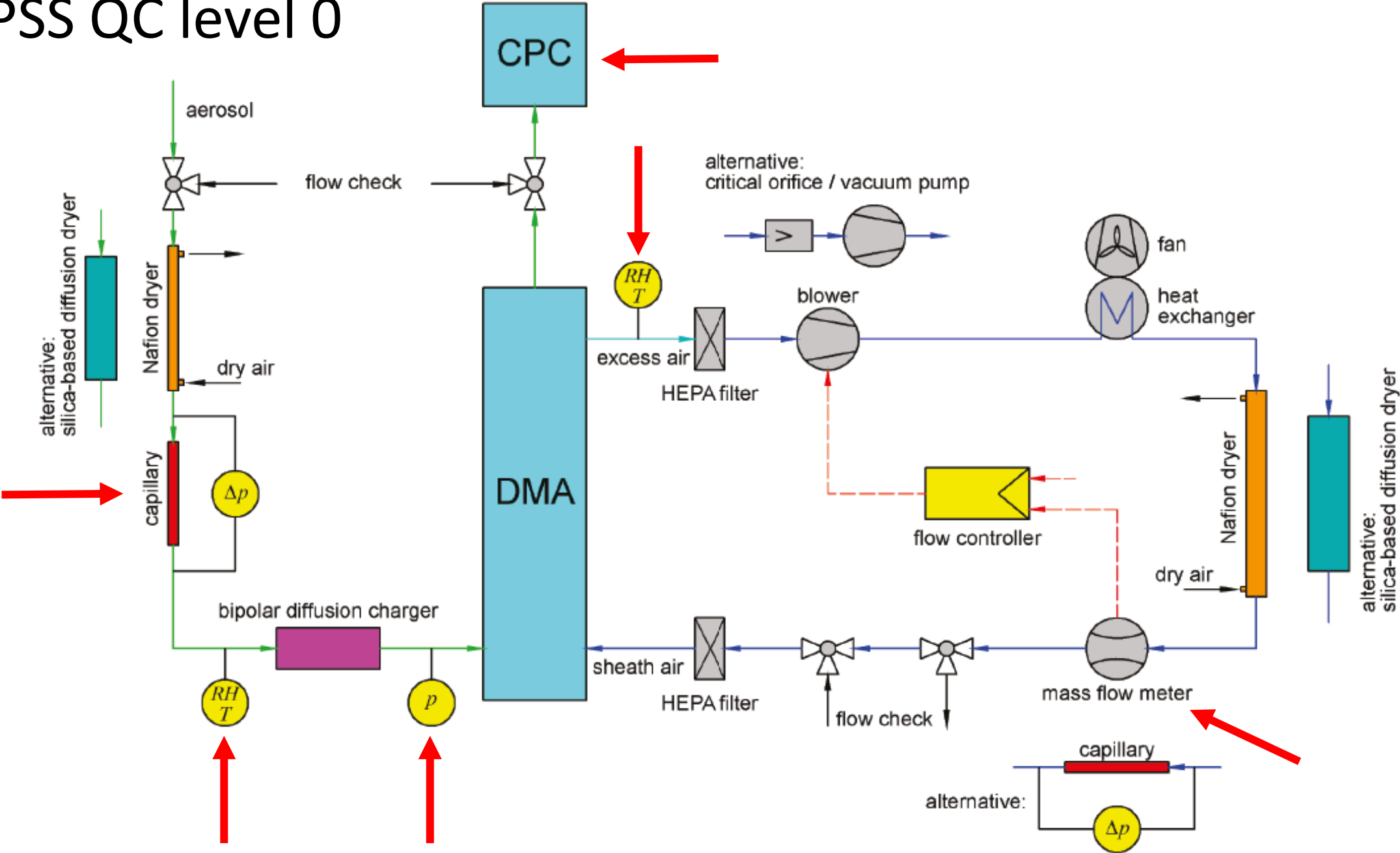
- Group 6: Mechanical or instrumental problem

Flag	Validity	Description
686	I	Invalid due to zero check. Used for Level 0
683	I	Invalid due to calibration. Used for Level 0.

- Group 9: Missing data

Flag	Validity	Description
999	M	Missing measurements, unspecified reason

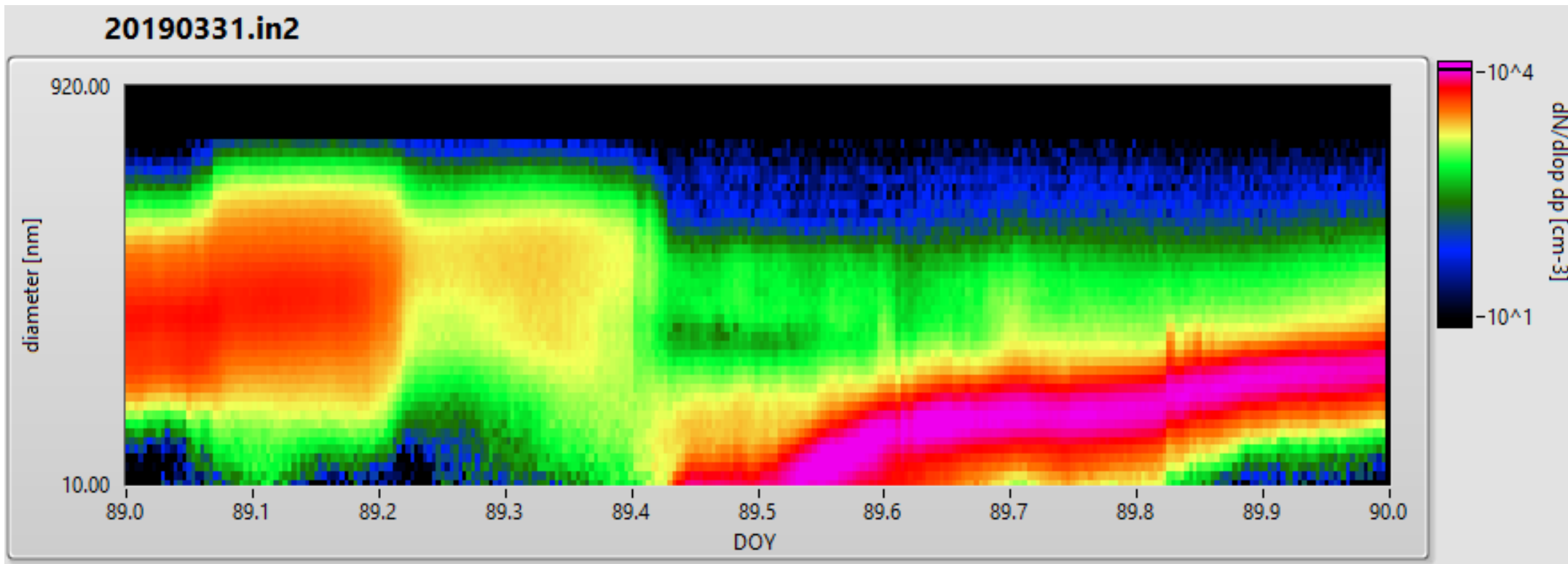
# MPSS QC level 0



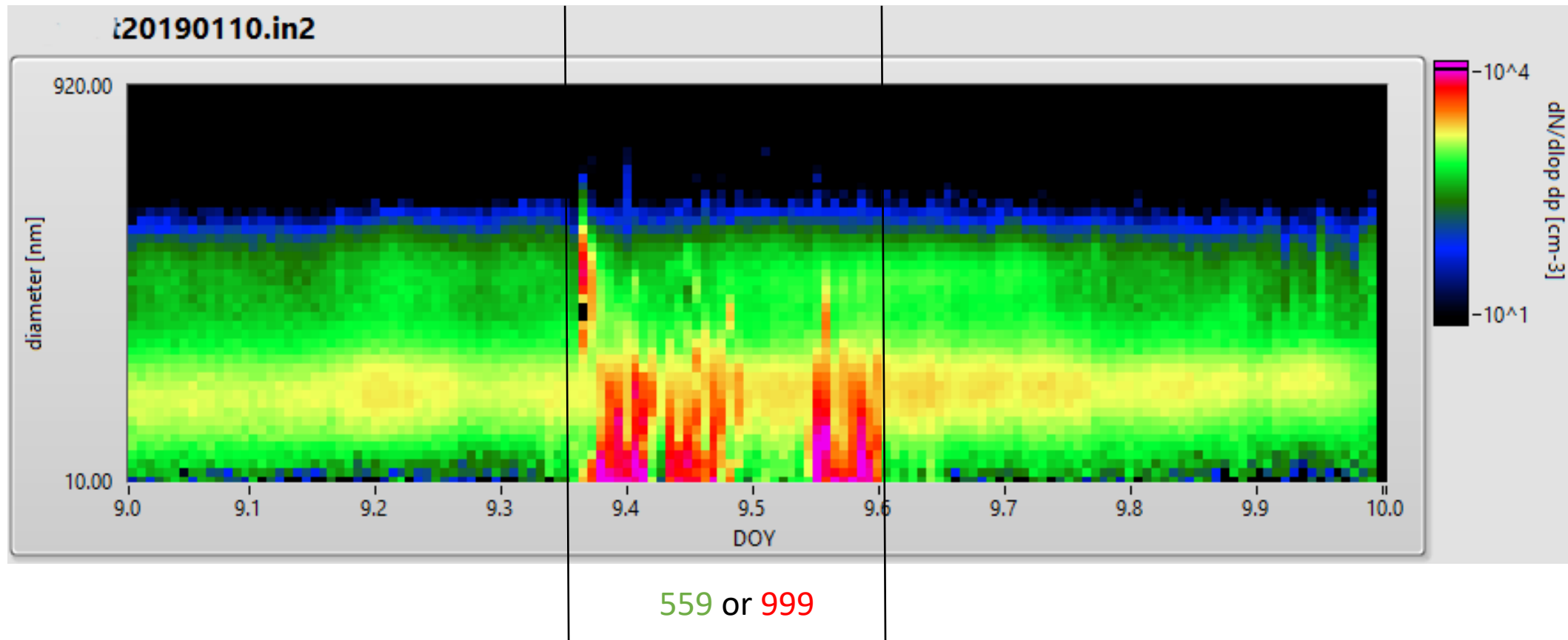
# Level 0 -> Level 1

- Check for inconstancy in pressure, temperature and flow rate (if available).
- Search for periods in RH above 40 relative humidity in the aerosol and sheath flow (if available)
- Remove data flagged invalid from further analysis (999, 6XX)
- Reduction of operational parameters according to EBAS template (if possible)
- Inversion of the data using the e.g., the TSI software
- Apply diffusion loss correction (ideally with the equivalent length; different software versions of older TSI instruments have different loss correction functions)
- Normalize to STP (1013 hPa, 273.15 K)
- QC level 1 data

# QC level 1 – plot daily contour plots – example of valid data

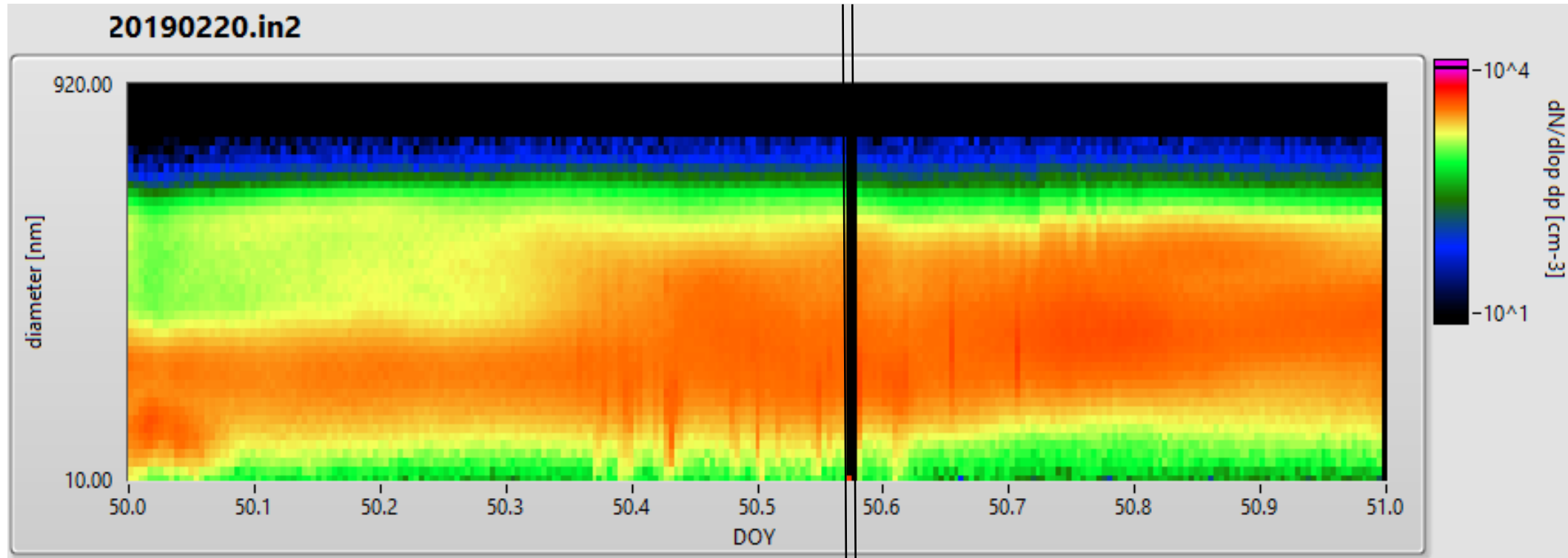


# QC level 1 – Contour plot – local pollution



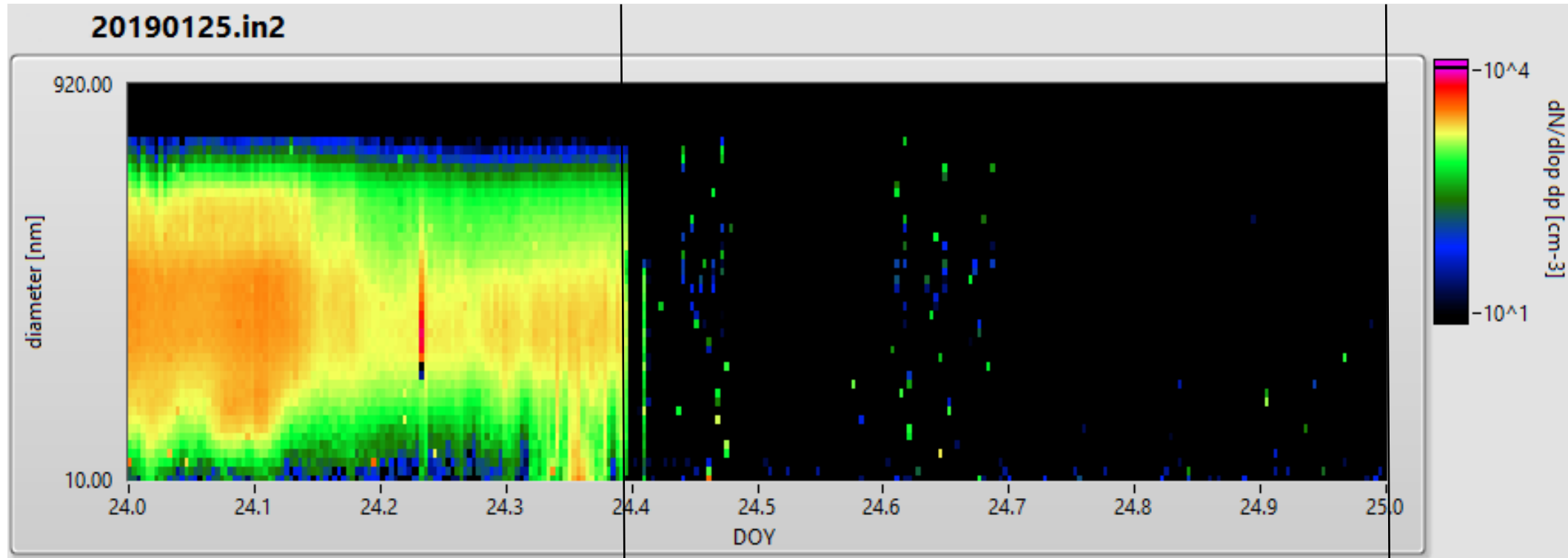


# QC level 1 – Contour plot – zero check



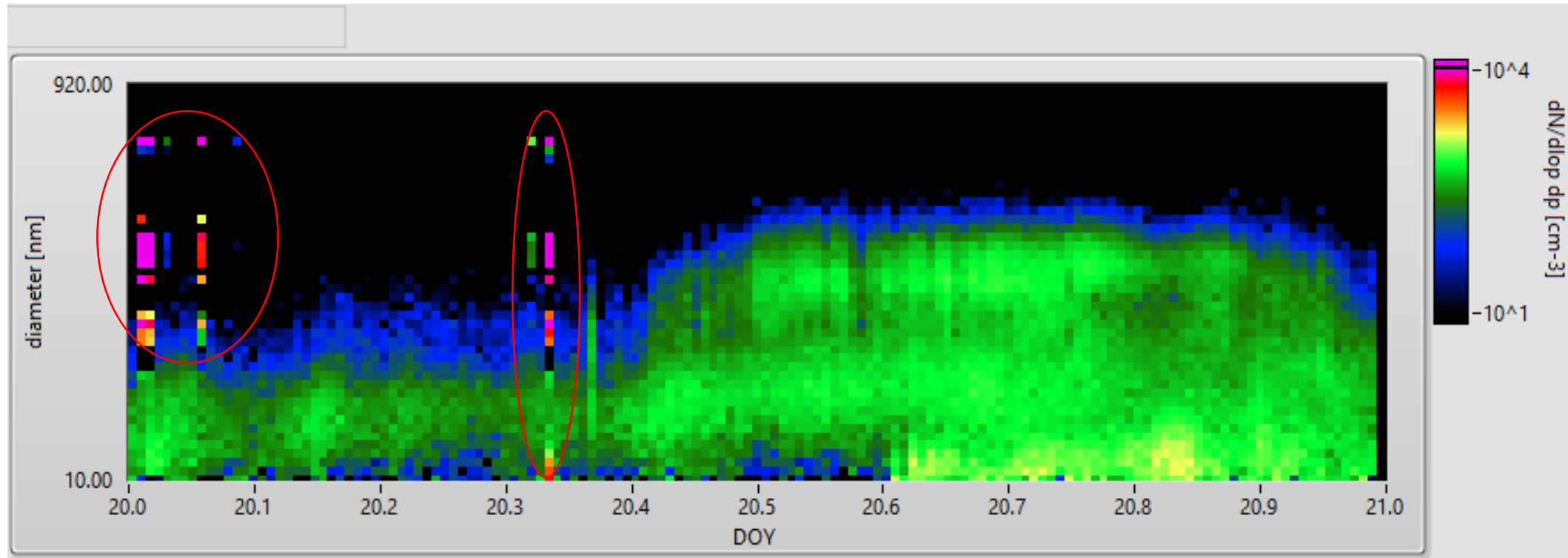
686 – does not exist in level 1  
Should have been removed in level 0

# QC level 1 – Contour plot – CPC working fluid empty



999

# QC level 1 – Contour plot – arcing DMA 2



Individual size distributions to be flagged 999

# Level 1 -> Level 2

Submission of level 2 data is the minimum requirement for the RI URBANS data

- Remove data flagged invalid from further analysis (999, 6XX)
- Reduction of operational parameters according to EBAS template
- Calculate hourly means and percentiles
- QC level 2 – check for negative mean concentrations