

# Quality control & assessment for radiosonde data products



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- Current status in GRUAN
- Some ideas
- Start of discussion

## Motivation

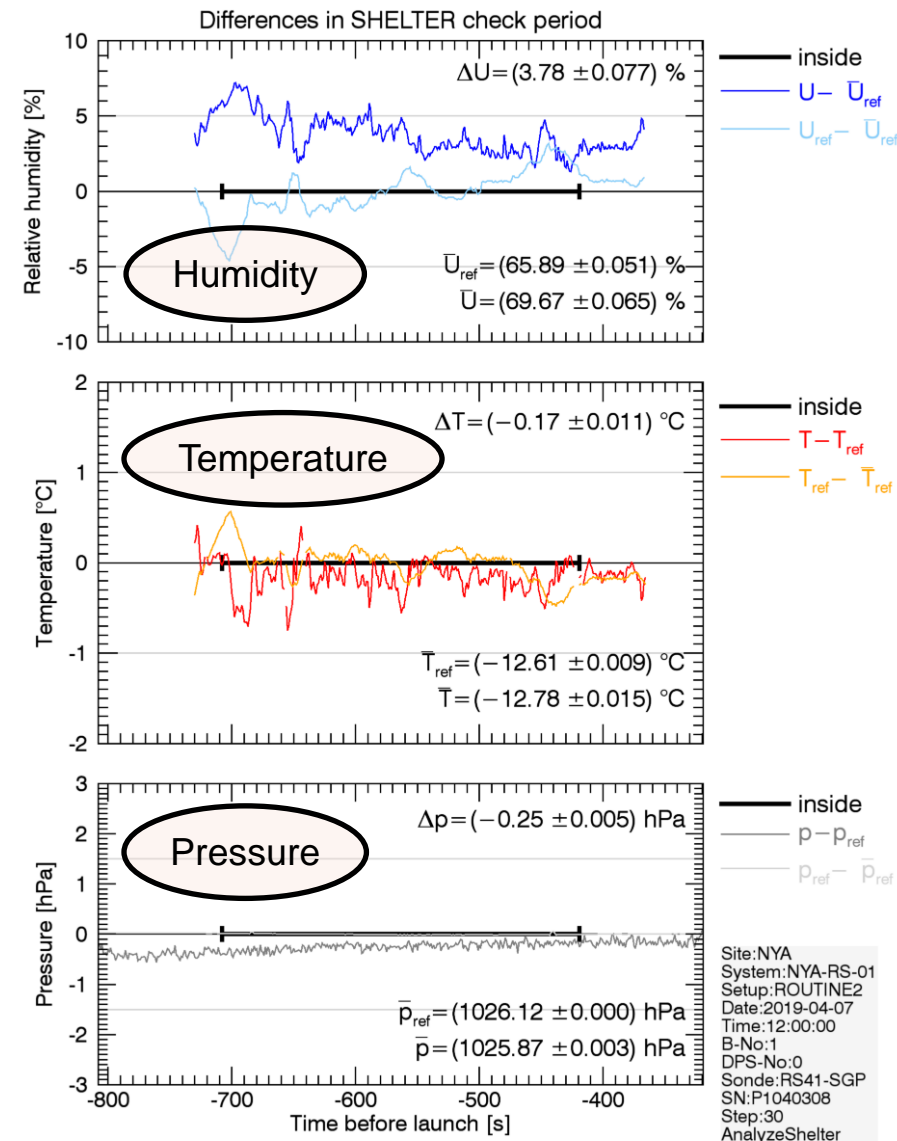
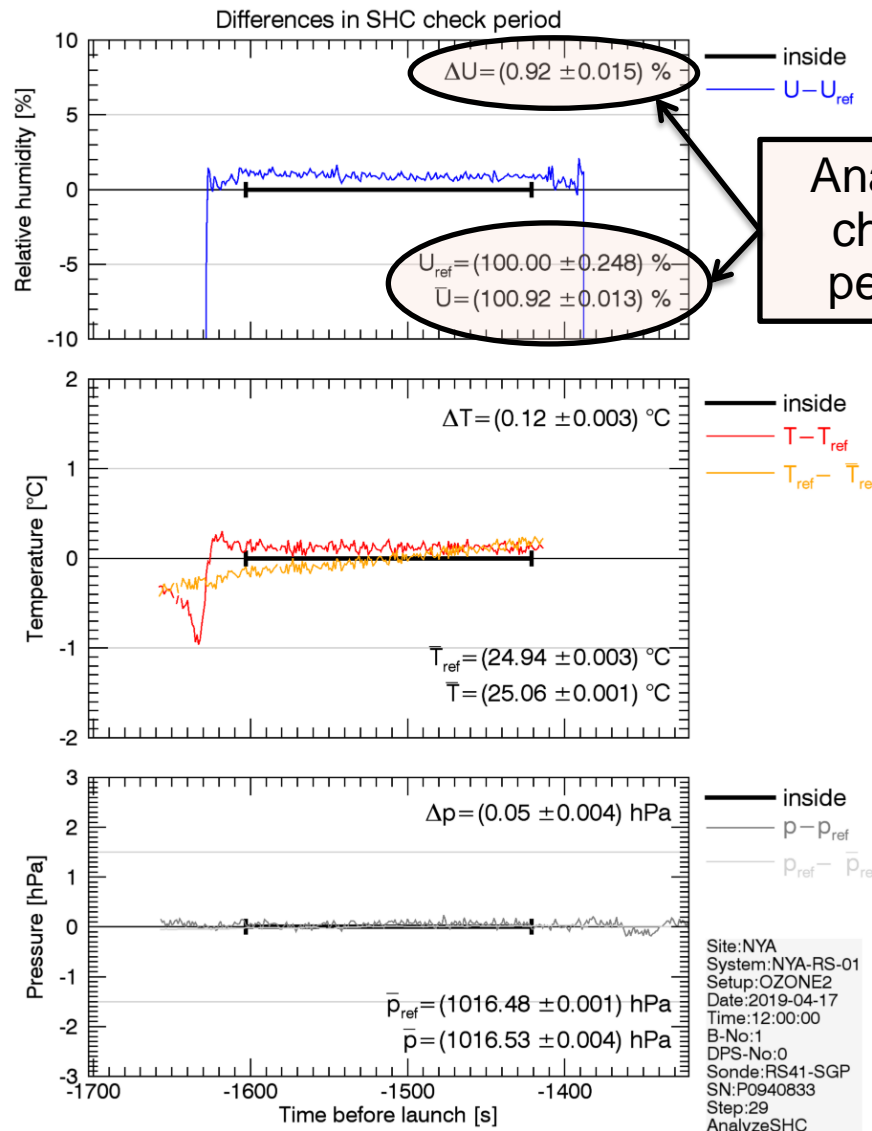
Meaningful response from LC to sites is demanded.

User of GRUAN data want to have best radiosonde data  
with controlled quality.

- RS92-GDP.2 → some rules are defined by LC → incl. assessment
- RS-11G-GDP.1 → other rules are defined by PC → NO assessment
- Until now → NO GRUAN-wide scheme and NO general rules for controlling & assessment are defined yet
- The Lead Centre should not dictate such rules!
  - Some ideas are available, but more are necessary
  - Discussion is really needed with interested persons from community
  - A formal definition of rules is required (published as TN or part of TD)

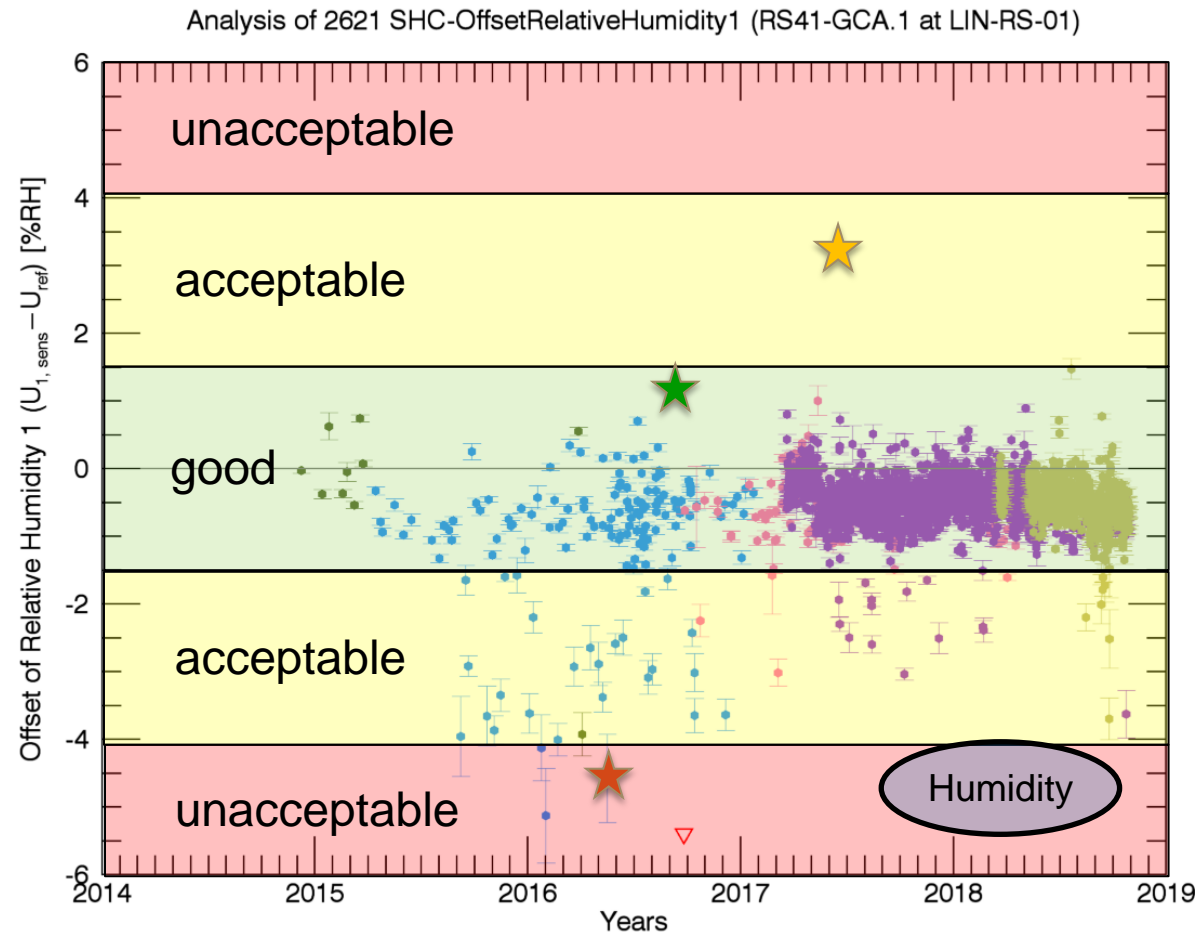
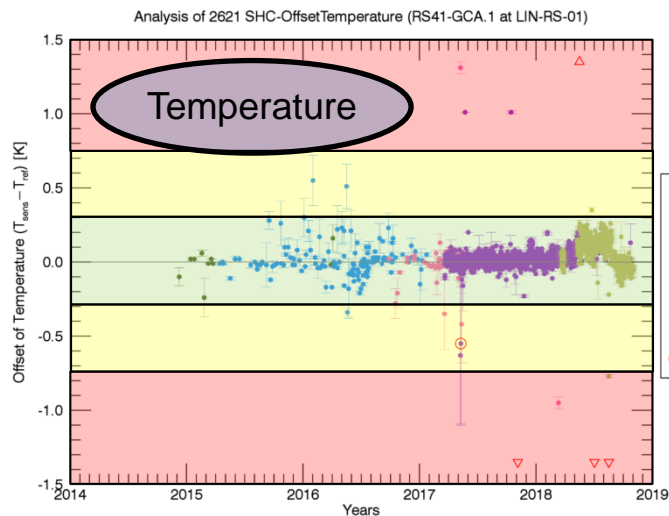
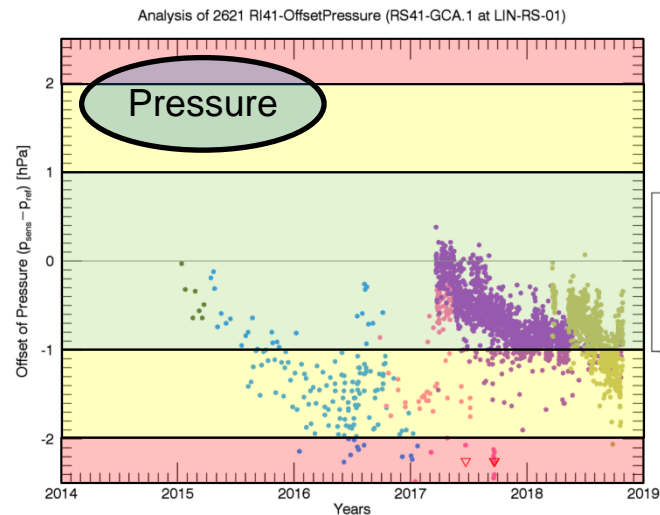
# Using ground checks, e.g. within SHC and shelter to assess

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Wetter und Klima aus einer Hand



# SHC: analysis and assessment

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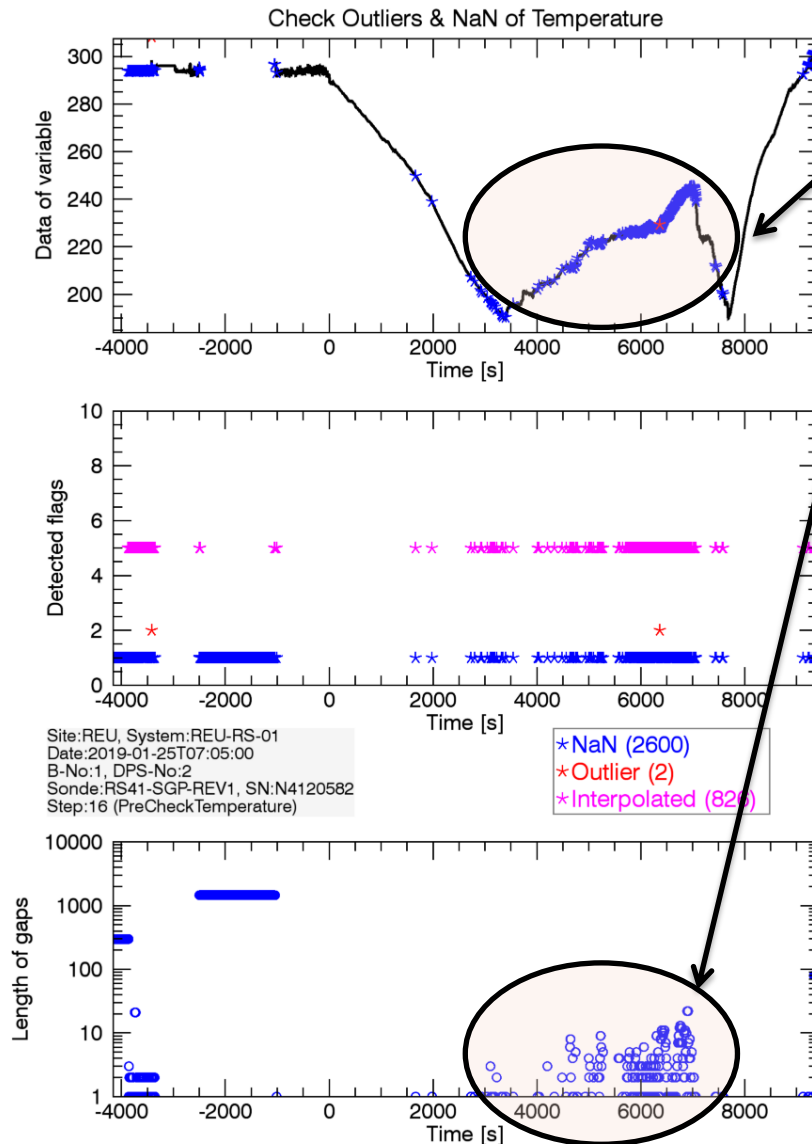


- What are the thresholds to say “good”, “acceptable” and “unacceptable”?
- How should we proceed? (processing, dissemination)



# Using results from QC to assess

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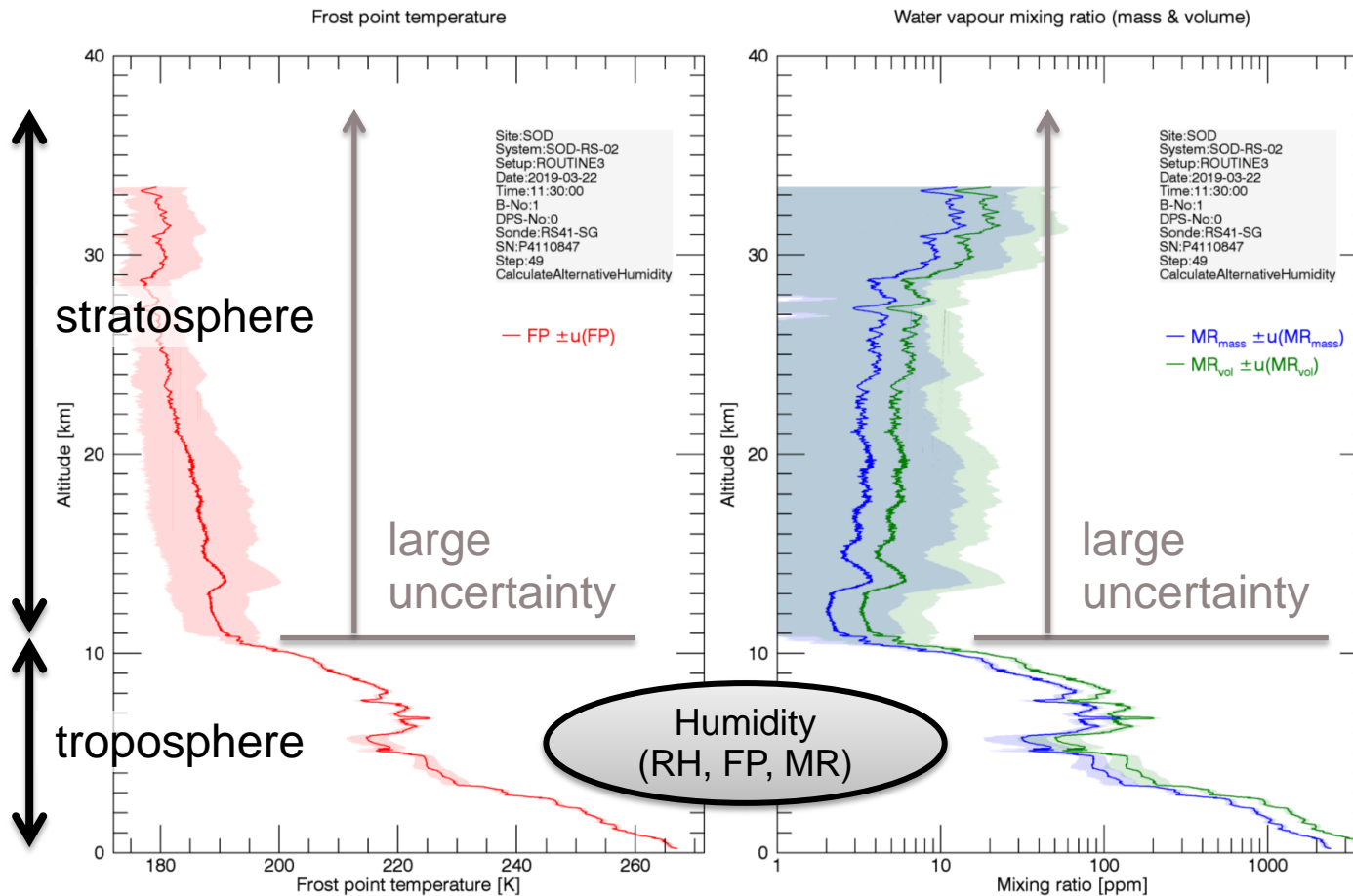


- How do data gaps influence the "quality" of a sounding?
- Should data files be distributed with data gaps?
- How do noise of data but also outliers influence the "quality" of a sounding?



# Using uncertainties to assess

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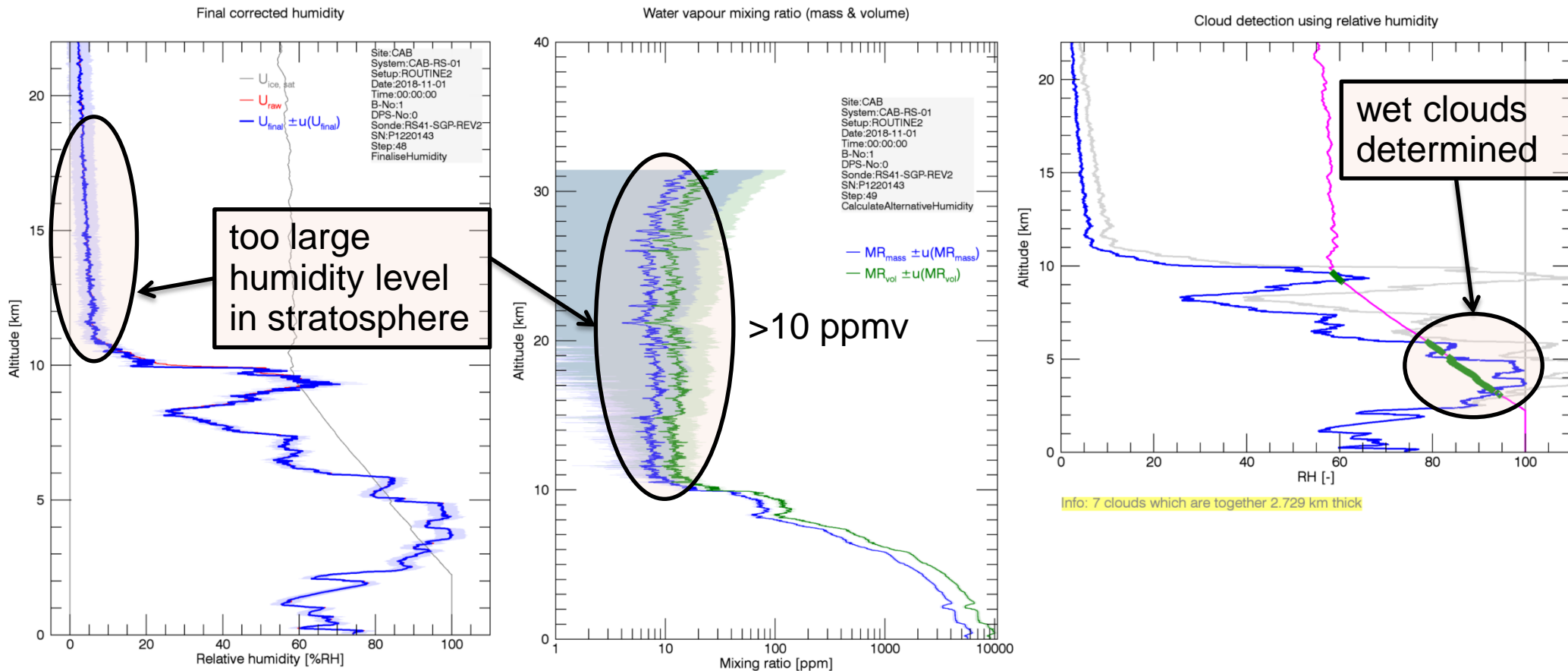
- How do larger uncertainty of data influence the "quality" of a sounding?
- What are the thresholds to say "good", "acceptable" or "unacceptable"?
- Should different "assessments" be provided for different altitude ranges?





# Using detected or assumed contamination to assess

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## ➤ How does contamination influence the "quality" of a sounding?

- Real detected contamination using measurement data
- Assumed contamination from meta-data description





# Quality assessment – a concept

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	Pressure / Alt.	Wind	Temperature	Humidity
Ground check	Large GC correction	OK	OK	OK
	OK	OK	OK	Large difference between U1 & U2
Troposphere	OK	GPS failure for 2 kilometers	Contamination detected (2 – 4 km)	OK
	OK	OK	OK	Large uncertainties in TP region
Stratosphere	OK	OK	OK	Values not in range (< 0.0 %)
	Large uncertainties above 27 km	OK	Large uncertainties above 33.5 km	More than 100 % relative uncertainty
Assessment summary	?	?	?	?
GRUAN stamp?				



- These ideas are a first input for discussion.
- Do you have more/other ideas?
- The Lead Centre needs participations from community.
- Wanted! → Group of persons to
  - think about general scheme and details → discuss and decide
  - write down and publish as official GRUAN document