Development of a GRUAN data product for Cryogenic Frostpoint Hygrometers

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GRUAN data product

NCAR

What distinguishes a GRUAN data product:

- Quantified uncertainties
- Manufacturer independent ground check
- Documentation
- Dedicated data flow
- Certification ?

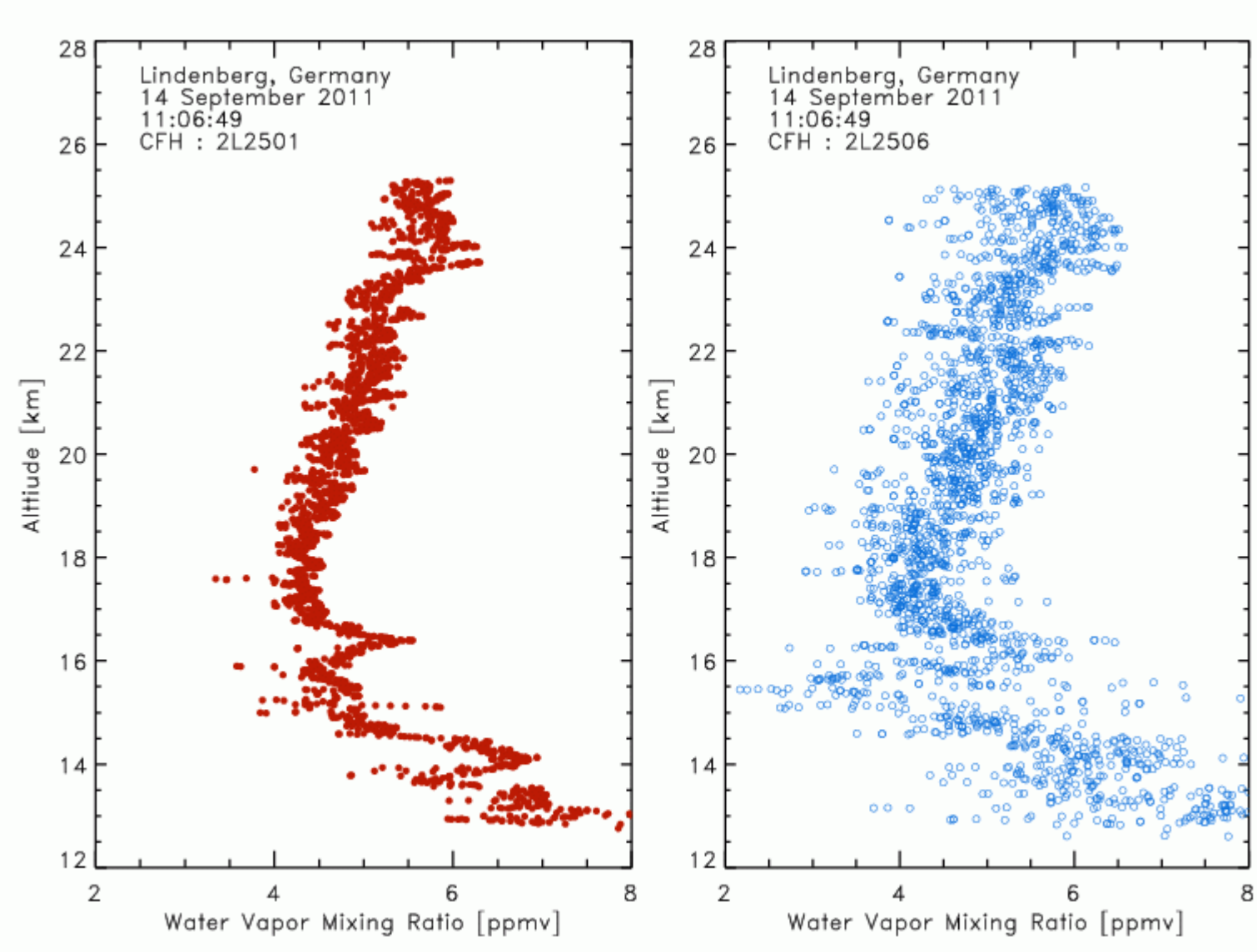
CFH uncertainty budget

NCAR

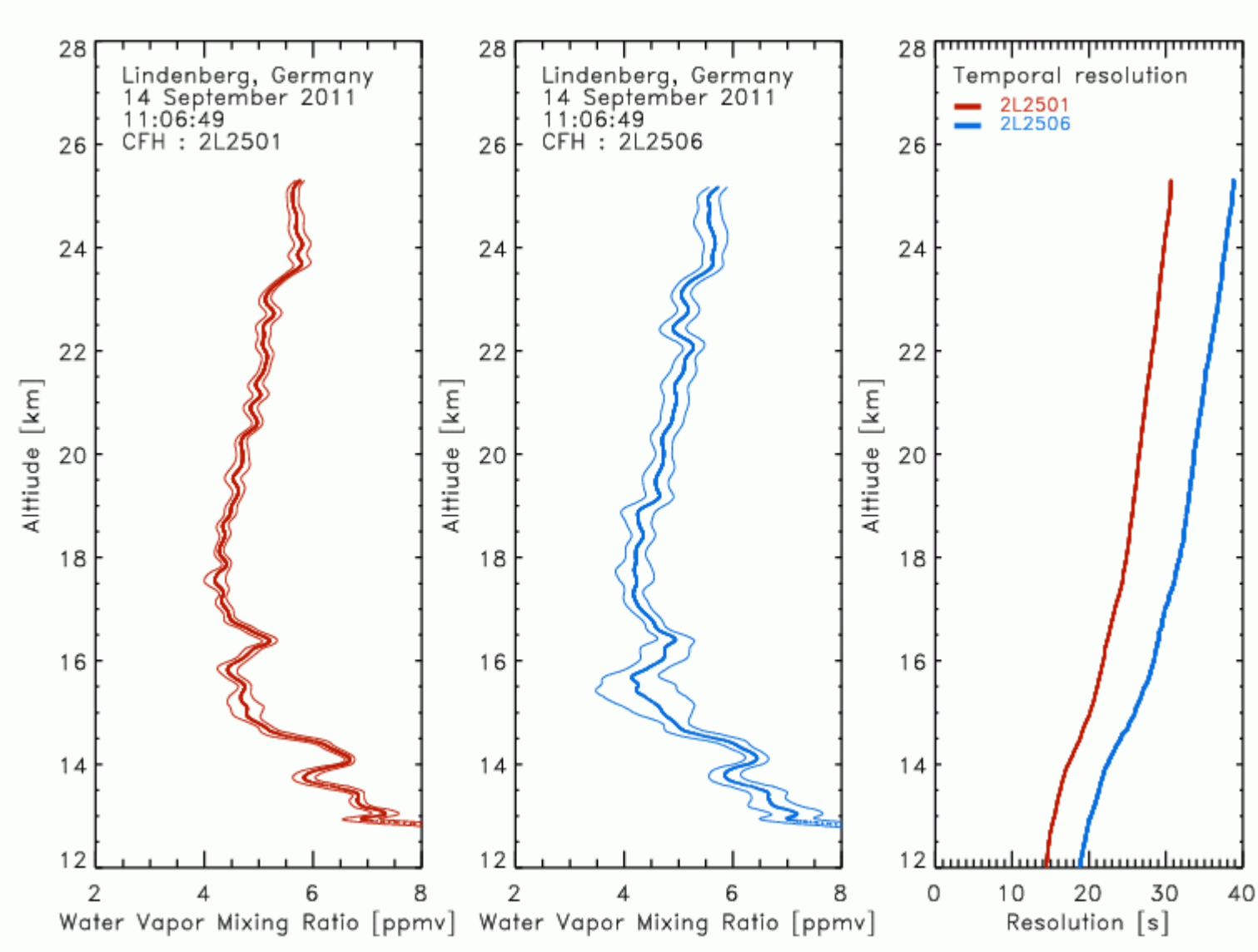
Thermistor calibration :	<0.05 K	(<1% mixing ratio)
systematic in profile		
systematic in time series		
Manufacturing variability :	< 0.2 K	(< 4% mixing ratio)
systematic in profile		
random in time series		
Controller stability :	0.1 K … 0.5 K	(2% to 10% mixing ratio)
random in profile		
random in time series		
PID drift : 0 K		
systematic in profile		
random in time series		

Contamination : Can be large. Is flagged out in processing

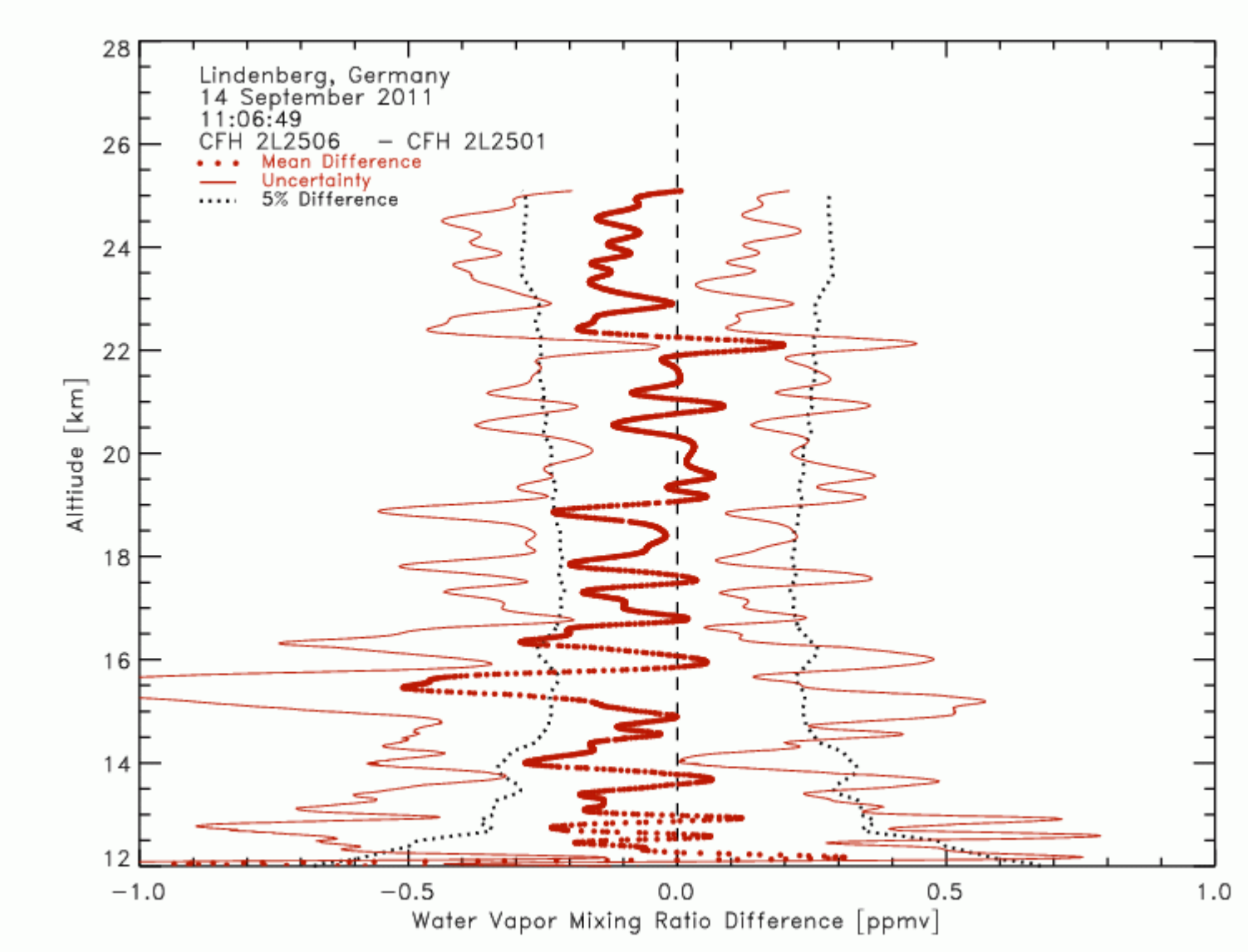
Sonde uncertainty and comparison



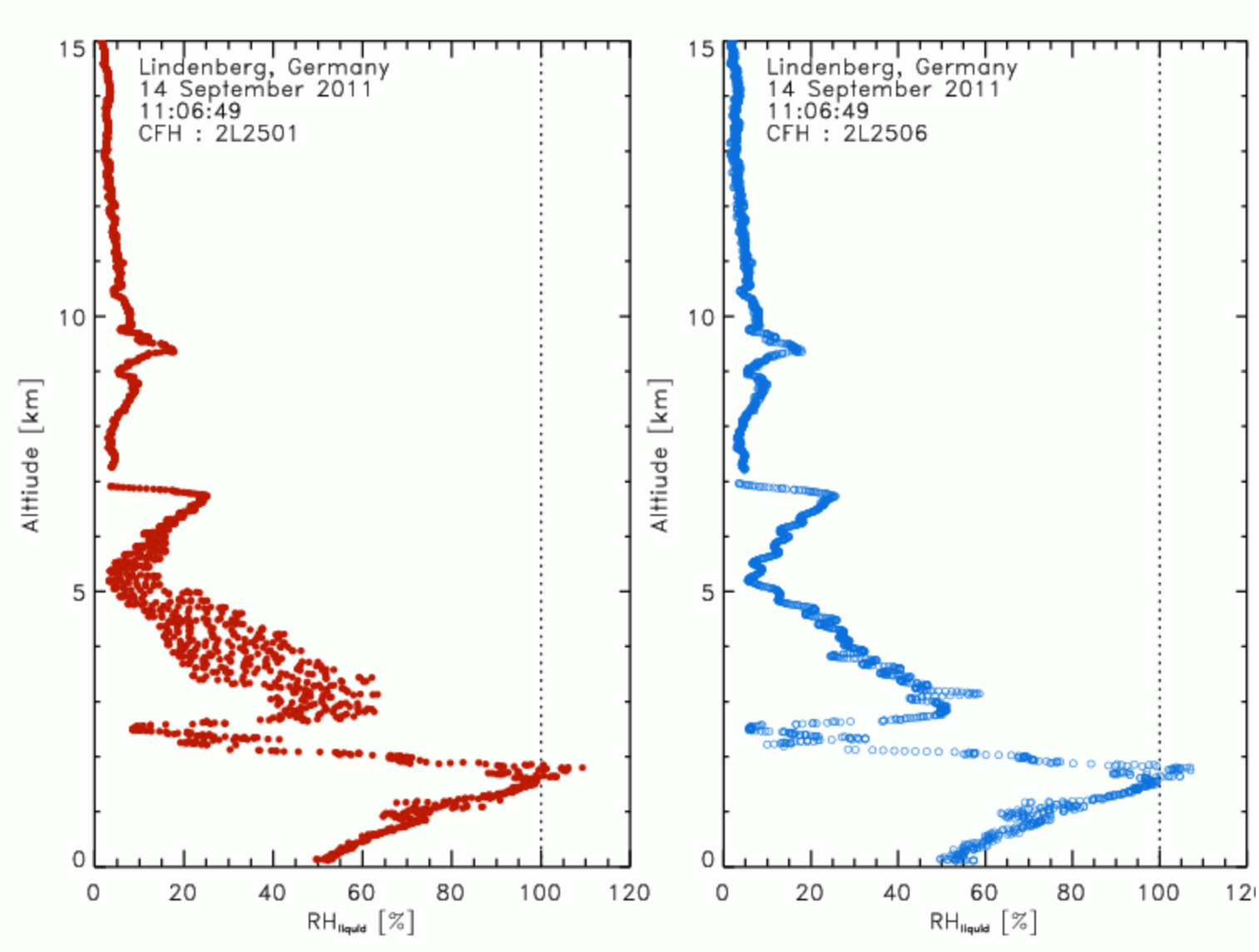
Sonde uncertainty and comparison



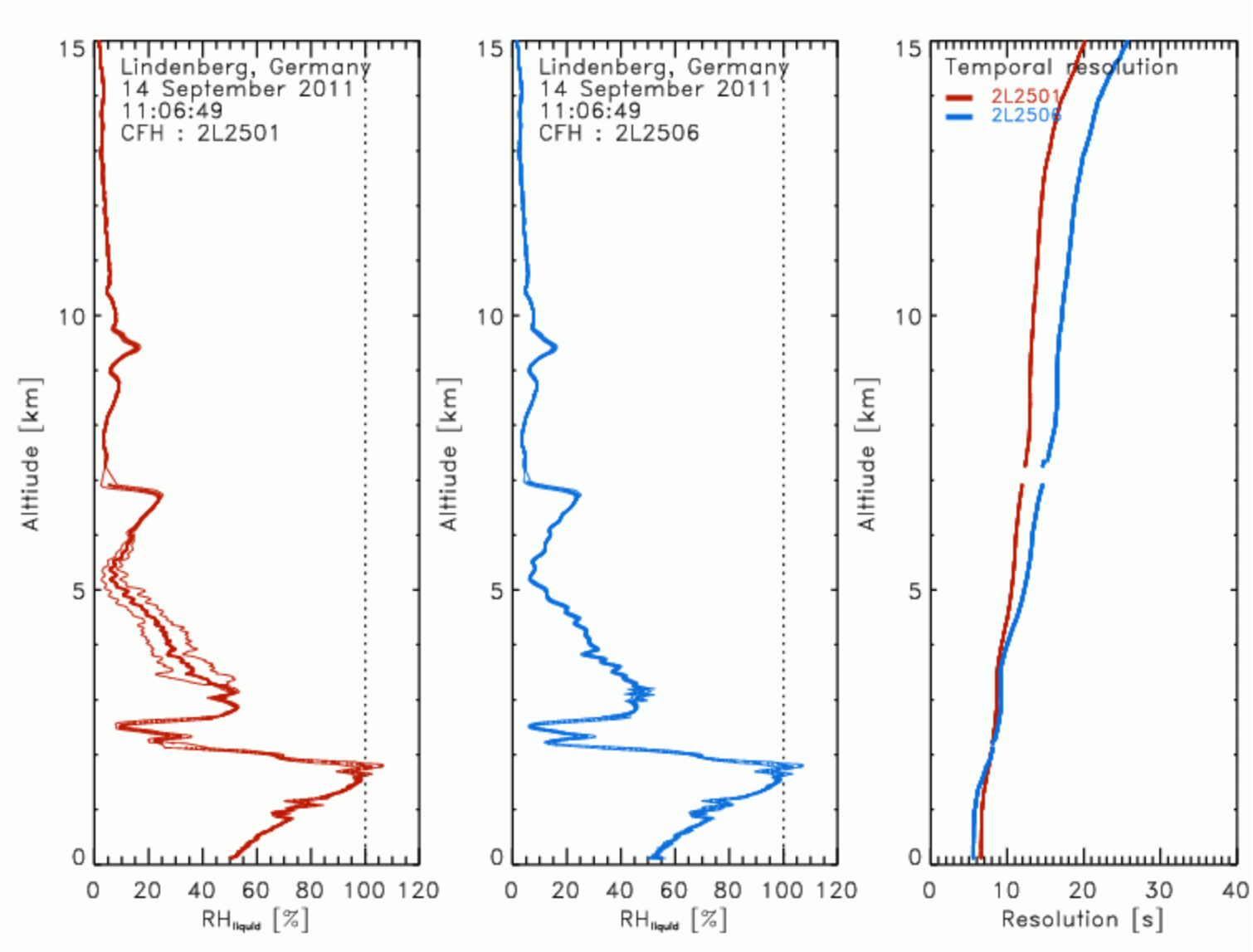
Sonde uncertainty and comparison (stratosphere)



Sonde uncertainty and comparison (troposphere)



Sonde uncertainty and comparison (troposphere)



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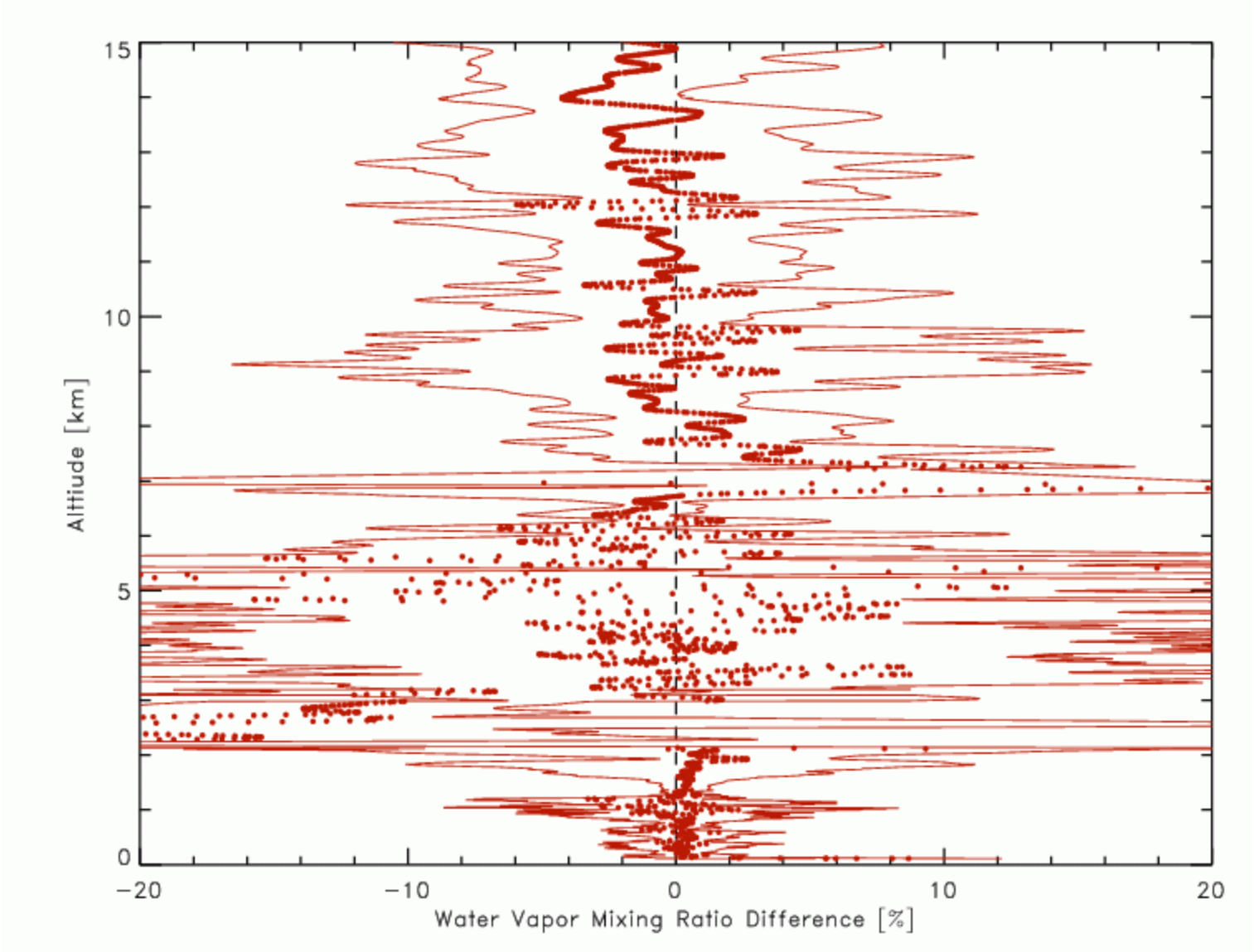
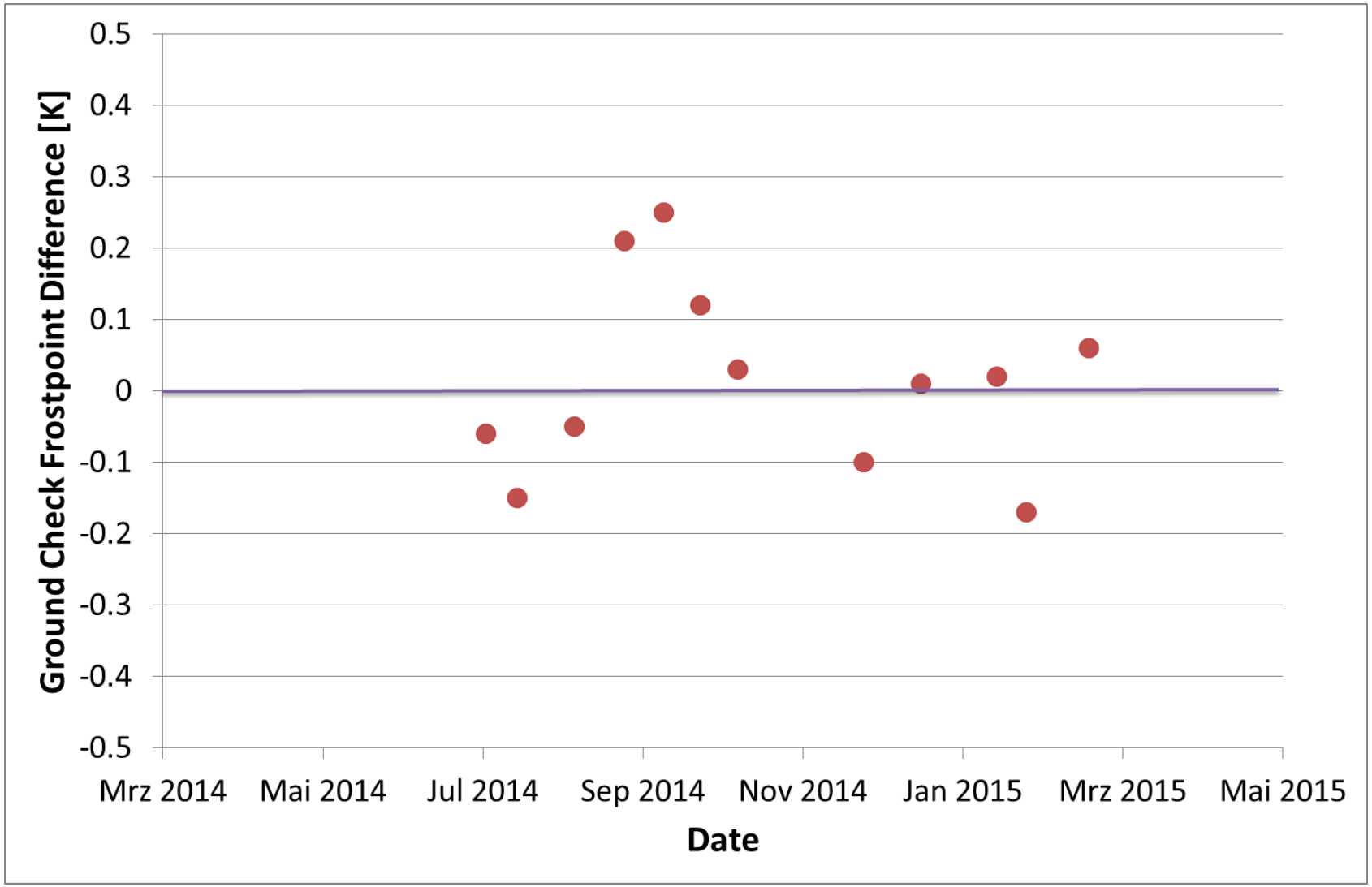


CFH Ground Check



Documentation

Paper (in progress)

Meta data

- Resolution
- Uncertainty
- Ground check

Data flow

Data not yet public since data product not complete.

Data partially implemented

Merge with RS92 data product to be done

Site → Lead Center → Processing center (NCAR) →
Lead Center → Data portal (NCDC)

Certification

By whom?

Suggest: Radiosonde task team followed by peer review publication