



Development of a GRUAN data product for Cryogenic Frostpoint Hygrometers

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What distinguishes a GRUAN data product:

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

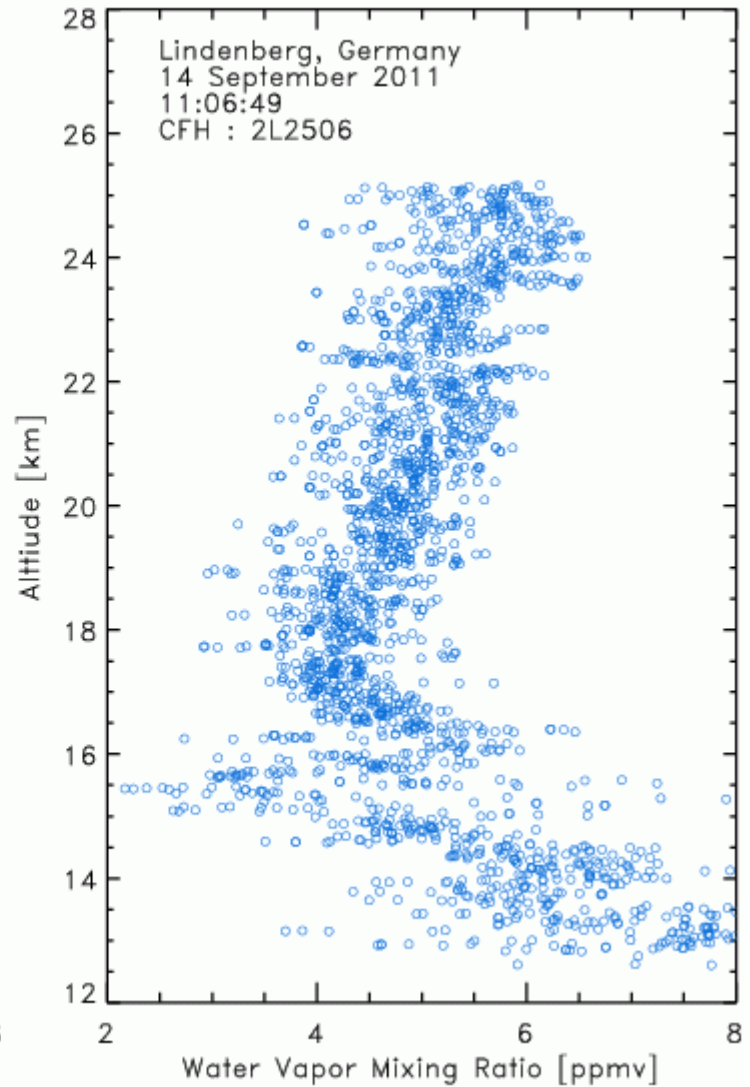
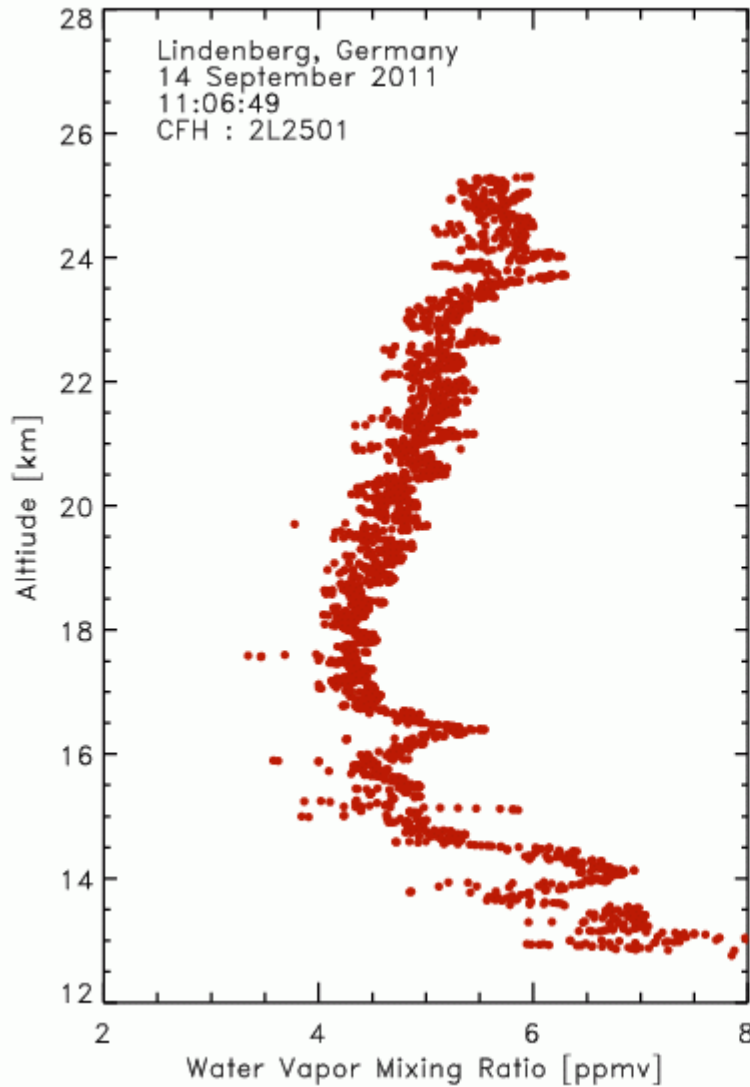
CFH uncertainty budget



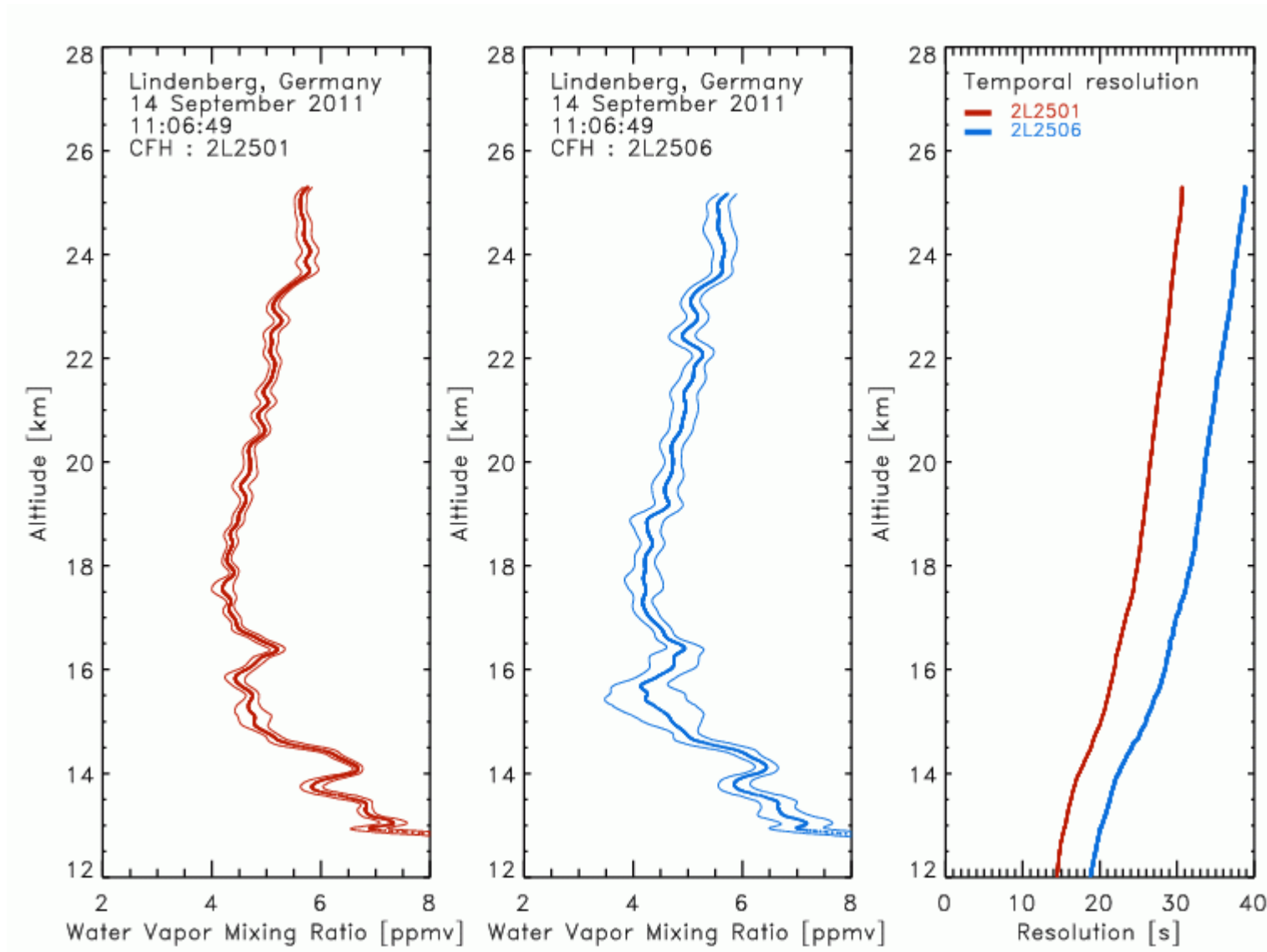
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Thermistor calibration :	<0.05 K	(<1% mixing ratio)
systematic in profile		
systematic in time series		
Manufacturing variability :	< 0.2 K	(< 4% mixing ratio)
systematic in profile		
random in time series		
Controller stability :	0.1 K ... 0.5 K	(2% 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	

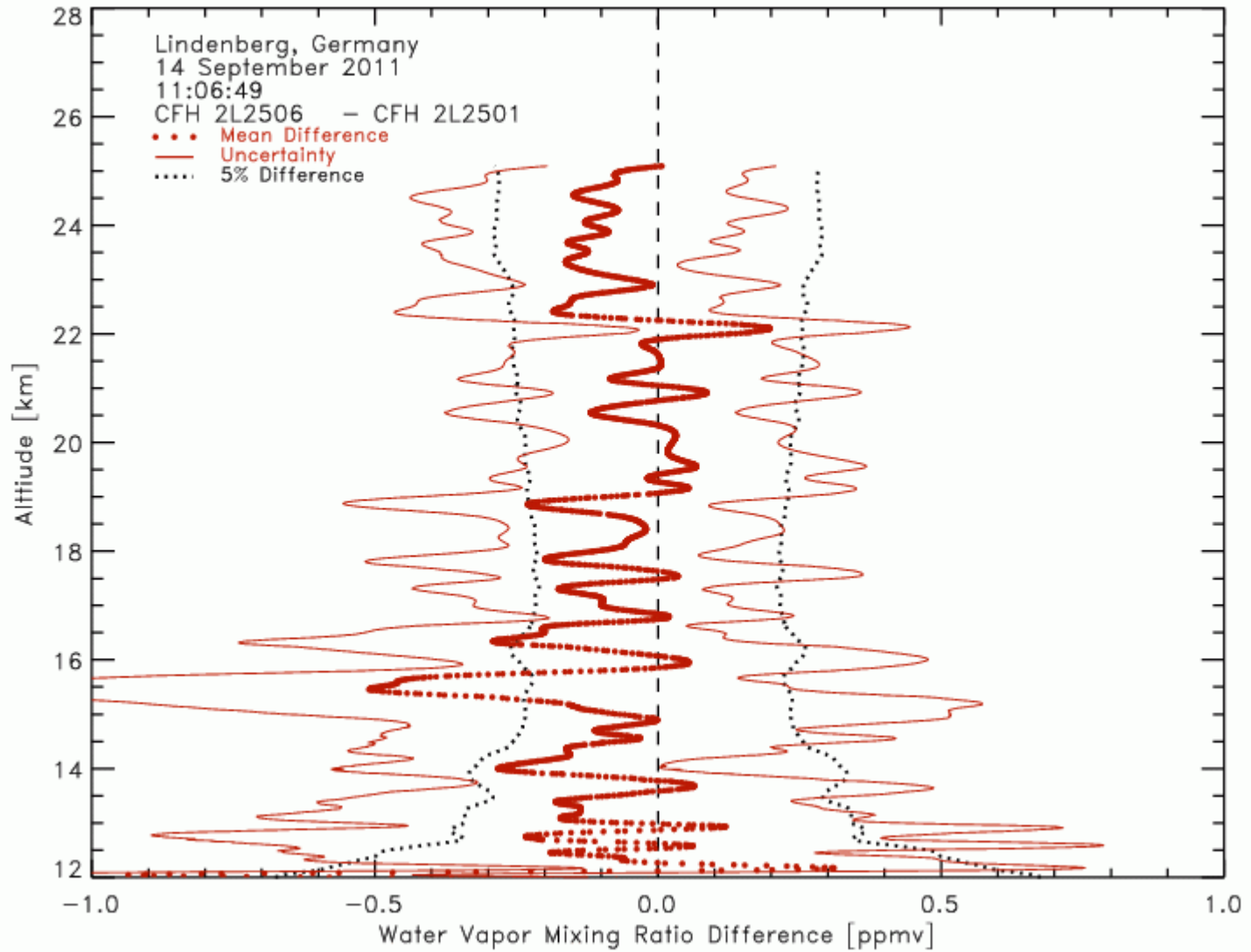
Sonde uncertainty and comparison



Sonde uncertainty and comparison



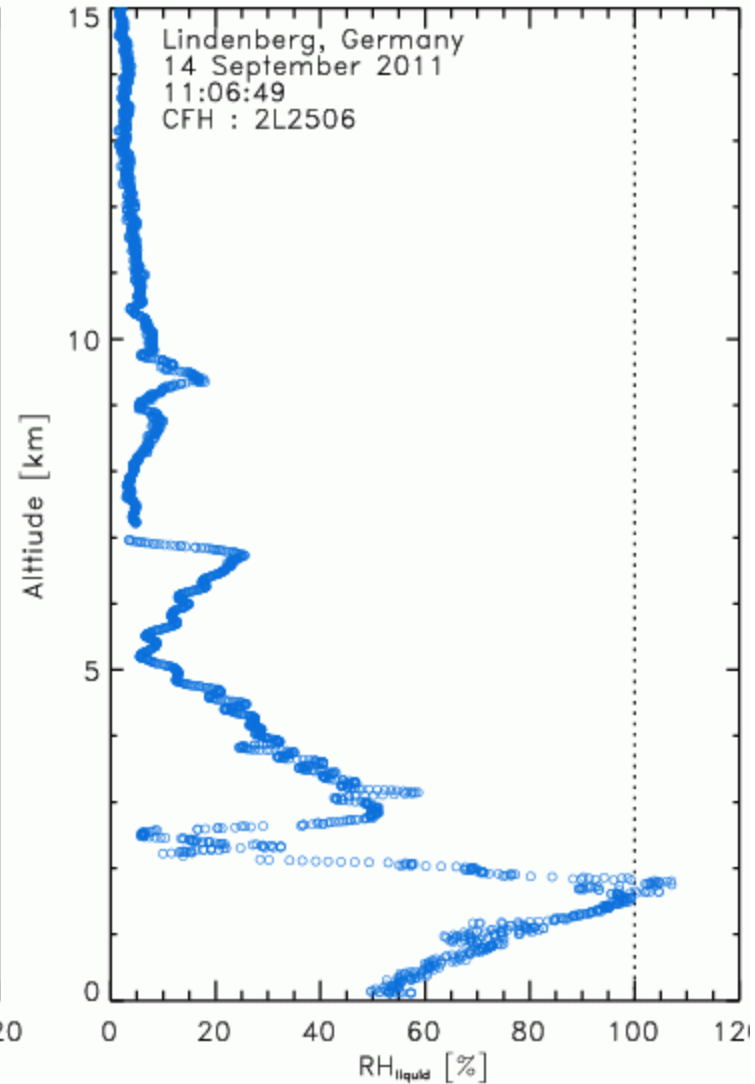
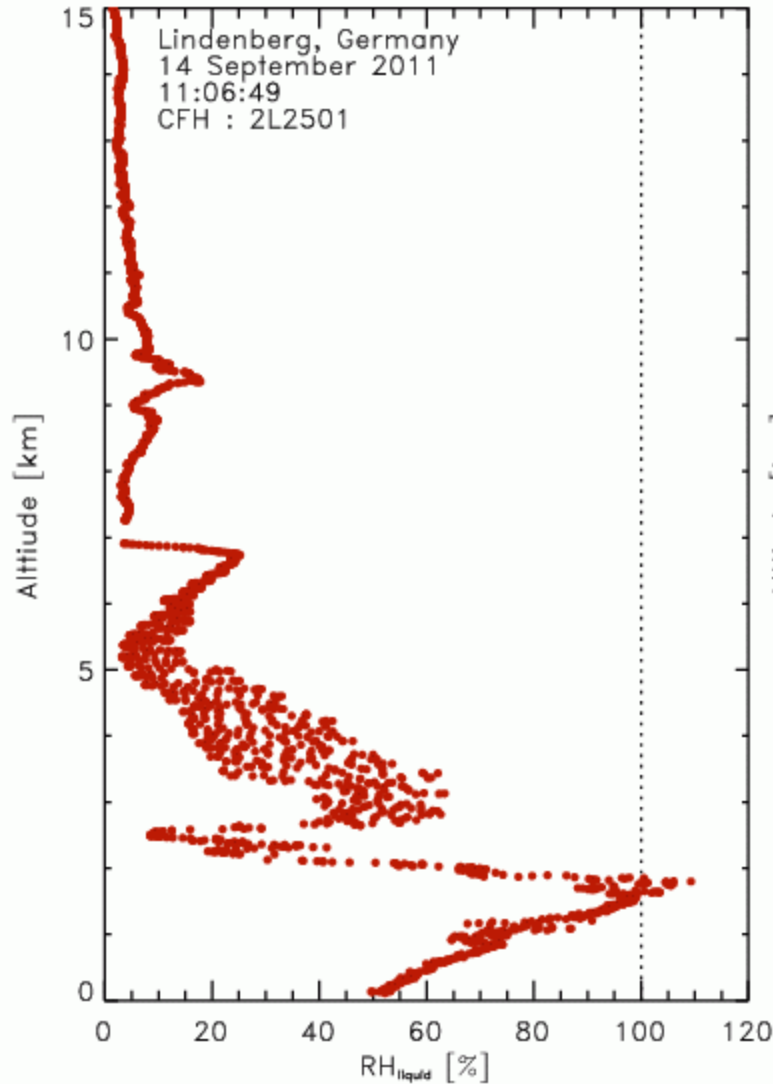
Sonde uncertainty and comparison (stratosphere)



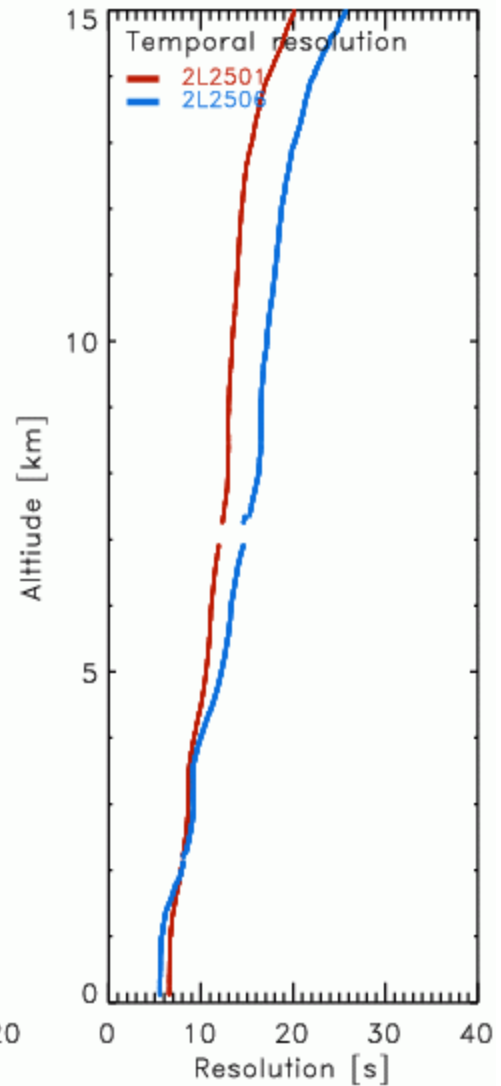
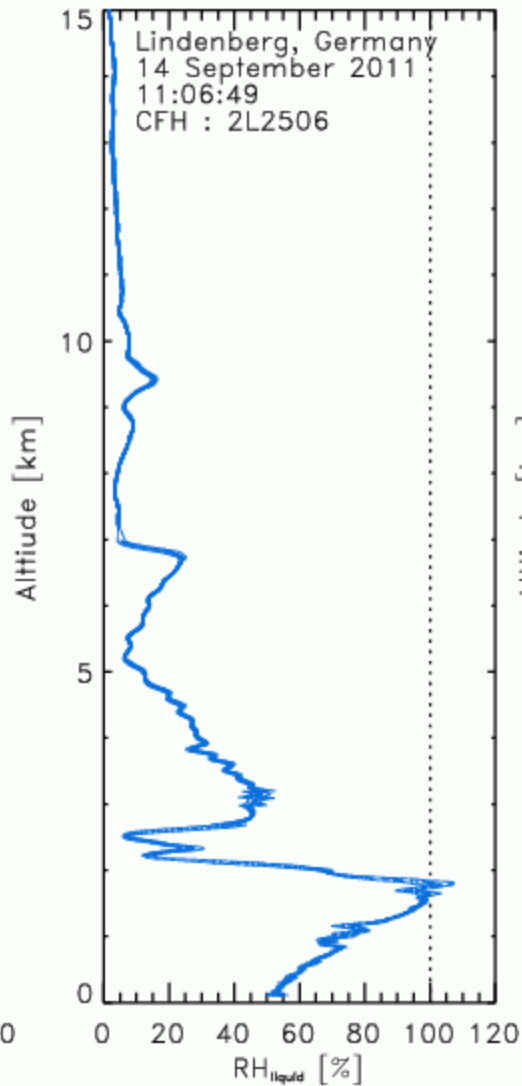
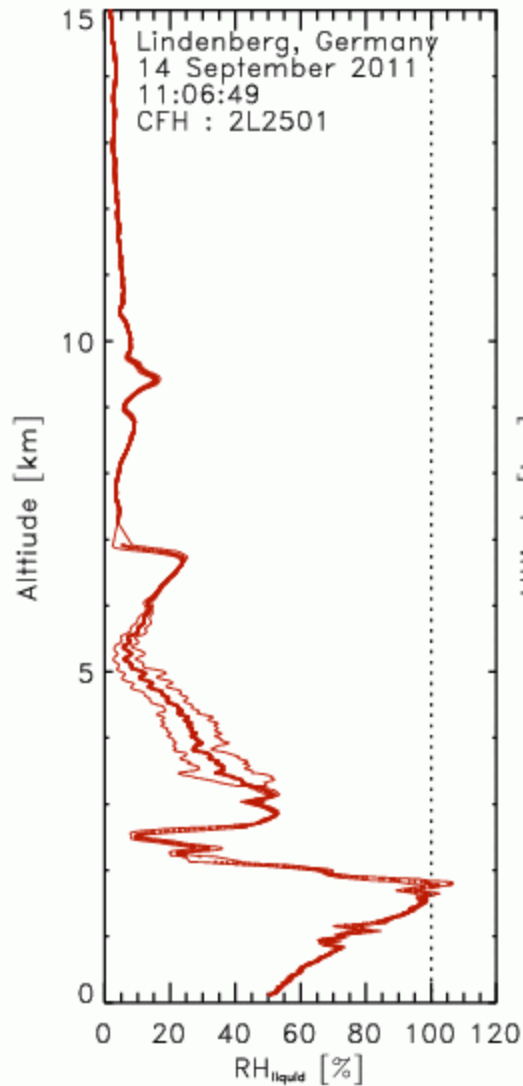
Sonde uncertainty and comparison (troposphere)



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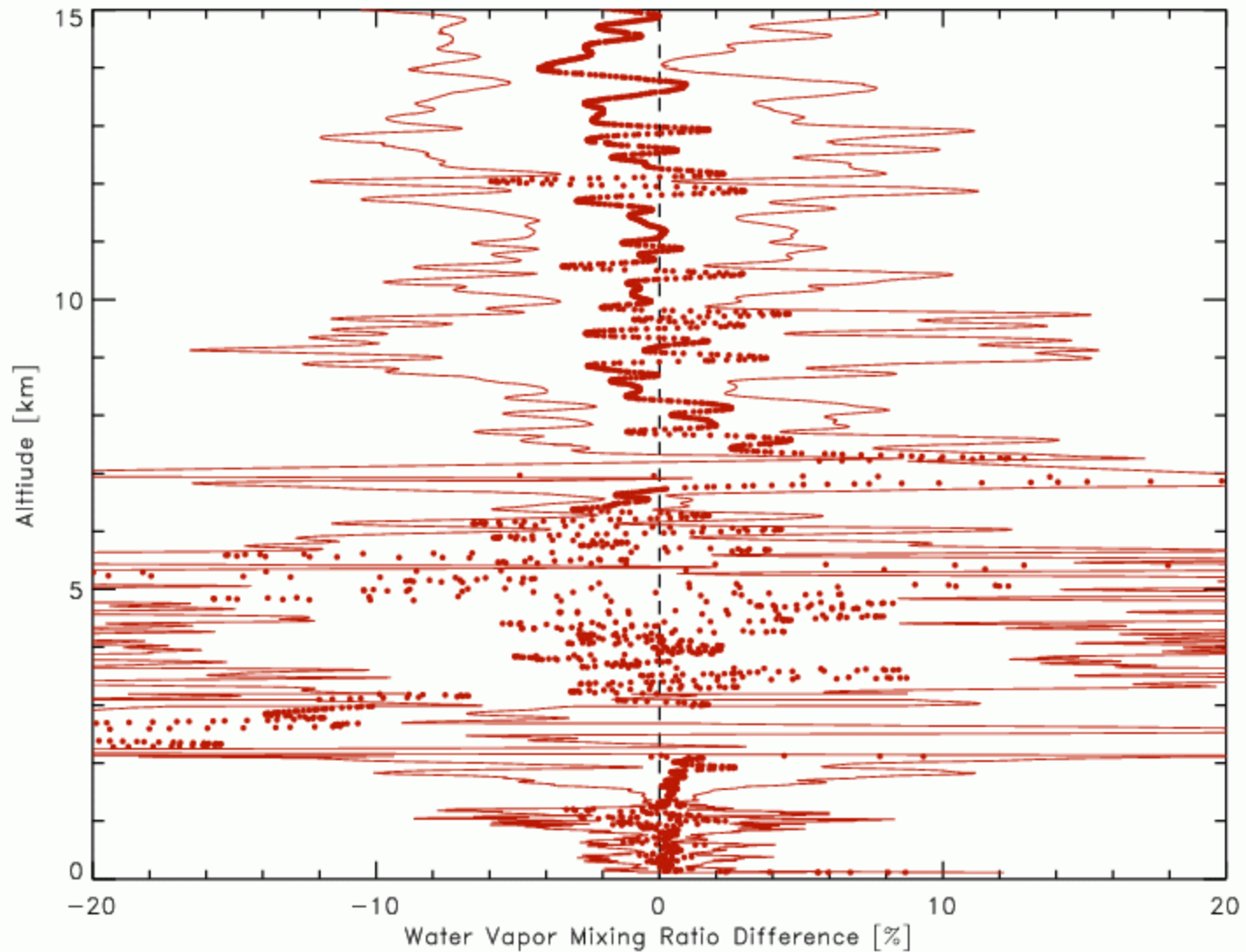
Sonde uncertainty and comparison (troposphere)



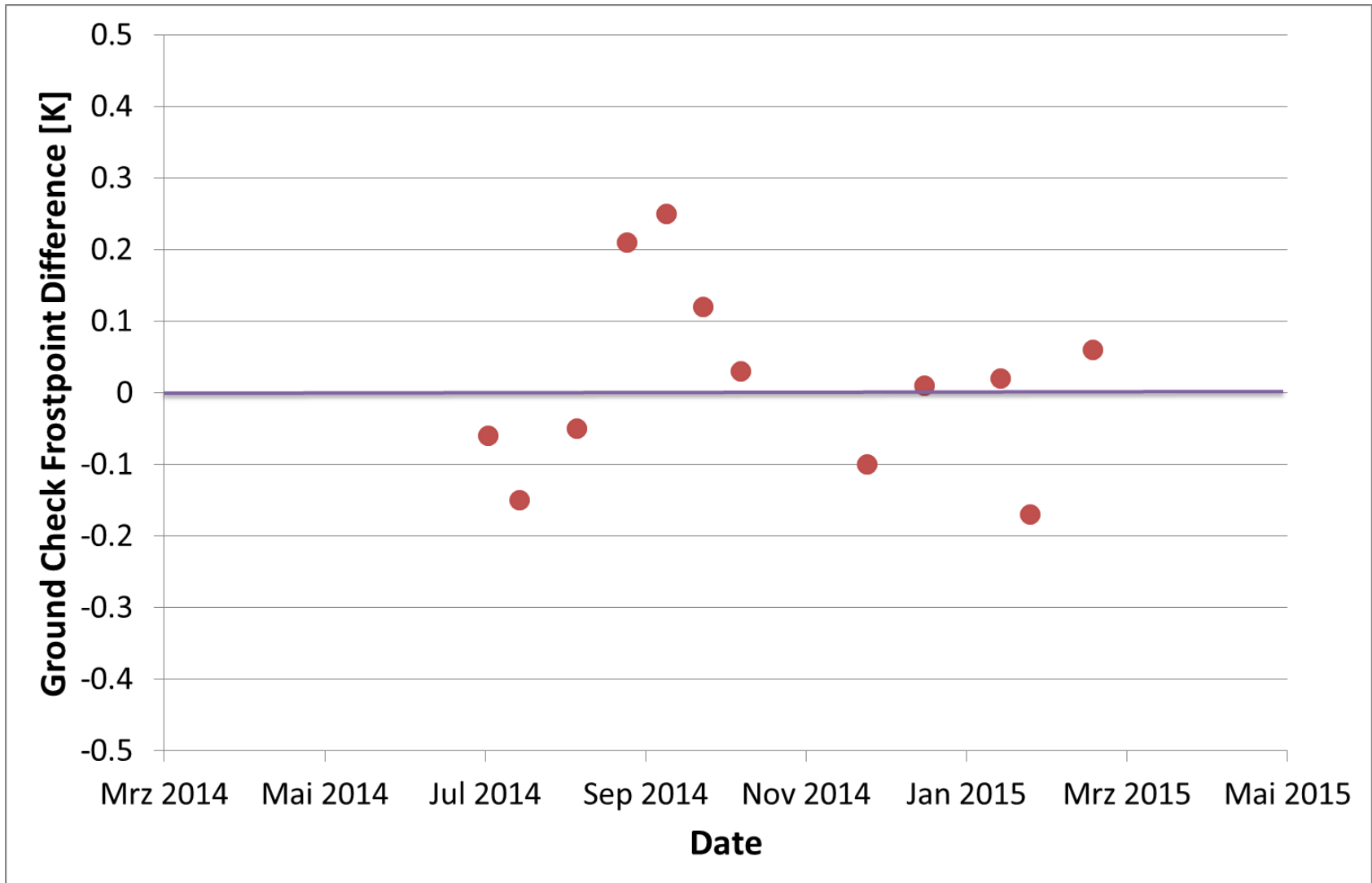
Sonde uncertainty and comparison (troposphere)



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CFH Ground Check





Paper (in progress)

Meta data

- Resolution
- Uncertainty
- Ground check



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)



By whom?

Suggest: Radiosonde task team followed by
peer review publication