



# Radiosondes in PECAN

Holger Vömel

NCAR EOL

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- Not all radiosondes are equal
- Some are more equal than others



- Which radiosonde systems will be deployed?
- Vaisala RS92 using GAUSS?
- Vaisala RS92 using MW31?
- Vaisala RS92 using MW41?
- Vaisala RS41 using MW41?
- Imet RSB1?
- Others?



## Pressure:

- Requires a good reference pressure sensor
- Requires accurate determination of surface altitudes (Meta data)
  - Altitude of the reference pressure sensor
  - Altitude of the surface GPS receiver
  - Altitude of the actual launch site
- An error in any of these three parameters may lead to errors in geopotential altitude and / or pressure from the radiosonde



- Ground check is actually a one point recalibration!
- All systems must perform ground check in GC25
  - Record temperature of radiosonde and GC25 reference
  - Record RH of radiosonde (Sensor 1 and Sensor 2)  
Make sure the desiccant is in good condition (RH reading should  $< 1\%$ )
  - Record pressure of radiosonde and of reference pressure sensor
- Skipping this step will introduce biases!



- Vaisala system will automatically record
  - Radiosonde temperature
  - GC25 temperature
  - Radiosonde RH (sensor 1 and sensor 2)
- Vaisala system will manually prompt for reference pressure



- GAUSS system will NOT record
  - Radiosonde temperature
  - GC25 temperature
  - Radiosonde RH (sensor 1 and sensor 2)
  - Radiosonde pressure
  - Reference pressure

These values must be recorded manually and must be entered as user comments into the system after the flight. Format must be unique and clear to allow automated processing.

# Vaisala RH reconditioning



- All Vaisala RS92 radiosondes must go through the RH reconditioning before flight
- Must use GC25
- Skipping this step will introduce RH biases!





- Vaisala RS41 does not perform a ground check recalibration for temperature.
- Vaisala RS41 performs a 0% check / recalibration for RH and temperature. These must be done.



- No ground check is operationally done.
- Reference pressure is important
- Should record good reference temperature
- Should record good reference RH



Must record and archive raw data AND meta data

Must allow reprocessing

All meta data should be recorded such that they can be processed automatically



Training should ensure, that all operators perform the same sonde preparation

Operator name should be recorded with the sonde launch