Lindenberg site report

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

GRUAN Lead Centre

- GRUAN operational program
- GRUAN data processing
- GRUAN research

Lindenberg - GRUAN operational program

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

- Daily radiosoundings (4x), with GC and 100% pot U and T check + GRUAN protocol using GRUAN Launch client - since 1. February 2011
  - Reference measurements (T,U) at launch site (Thygan + HMP)
- Weekly Ozone sonde (Vaisala RS92 + Science-Pump 6a ECC
- Research (since September 2010)
  - CFH (+ ECC + COBALD)
    - 1 monthly since 1.9.2009
    - from March 2011: 2 x monthly, one day and one night)
    - Instruments are recovered (using locator + forecast)
  - RS92FN once weekly, GDB, no GRUAN processing available
  - 1 weekly dual launch (starting this year)

100 % pot

- Following recommendation from TT1 this might be changed to a 97%-pot using K_2SO_4.

Ancilliary measurments

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

- MW GPS is available
- Lidar (measuring during CFH-COBALD launches)
- Ceilometers, Cloud radar, etc
- BSRN radiation
- Sun and star photometer (Aerosol water vapor)

GRUAN data processing in Lindenberg

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

- RS92 data product GRUAN: T, U wind. Starting operationally all GRUAN sites bets testing
- CFH stratospheric and tropospheric humidity (uncertainty estimation is pending)

- ancilliary processing tools:
  - radiosonde trajecteory forecast (->ETH paper)
  - Intercomparison and validation tools (RS - GPS, RS92 - CFH)

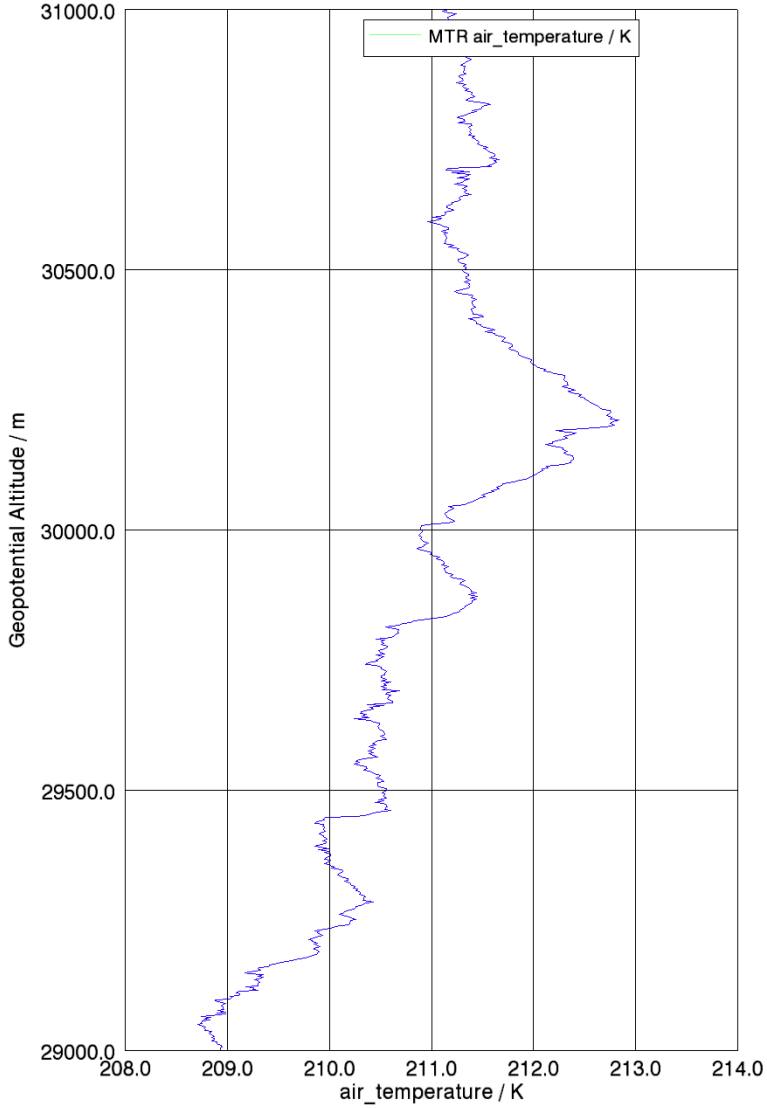
Lindenberg research for GRUAN

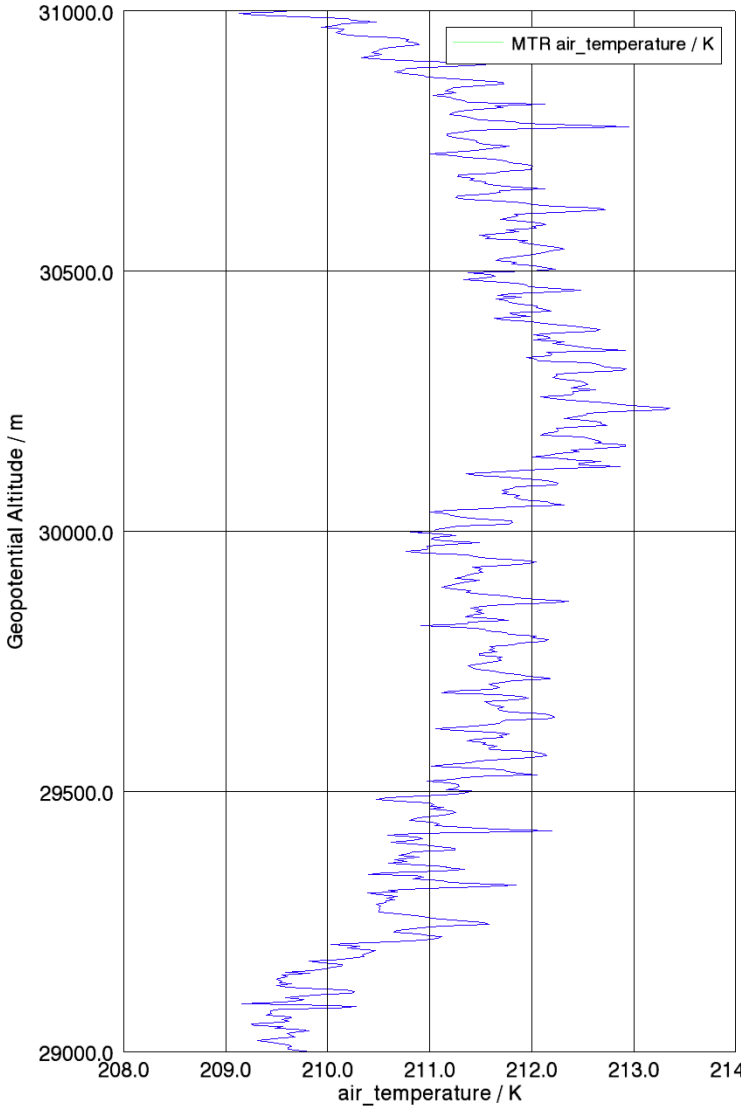
Deutscher Wetterdienst
Wetter und Klima aus einer Hand

- Radiation effect on Temperature sensor (RS92, Graw DFM-06/9, Intermet) and humidity sensor (RS92) determined in lab.
- Climate chamber for testing/ calibrating humidity sensors (CFH, RS92, WVSS)
- MTR Campaign in Nov 2010
  - Balloon wake and contamination effect.
  - Temperature reference
- FLASH -B, test of RS92 version, October 2010
- Cloud and aerosol detection, COBALD, other options are tested.
  - Detection of supercooled liquid clouds important in routine sounding.

MTR campaign

Deutscher Wetterdienst
Wetter und Klima aus einer Hand





Plans and perspectives

- Reprocess radiosonde (RS92) data from 2004
- Level 3 dataproduct: RS92 + CFH + GPS consistent H2O Profile.