



Automated sonde launches: an update on progress and plans.

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Autosonde overview

- **Stations**: Sodankylä, Jokioinen, Potenza, Kushiro, Matsue, Minamidaitojima, Shionomisaki, Wajima.

Data already collected and investigated:

1. Time series (total time on a tray; total sounding time, balloon filling volume; ascent rate; P, T, U1, U2 correction in GC, etc.)
2. Parallel soundings:
 - Temperature and Humidity profile differences
 - Soundings grouped by the time sonde stays on a tray before the launch.



Results

1. Statistics on the autsonde performance (total time on a tray, total sounding time, balloon filling volume, GC corrections, etc.)

2. Parallel soundings:

- Variations of time period between ground check and launch did not influence the comparison results
- Parallel soundings suggest no significant biases in temperature and humidity profiles



What's missing to use the autosonde for GRUAN?.. An independent GC.

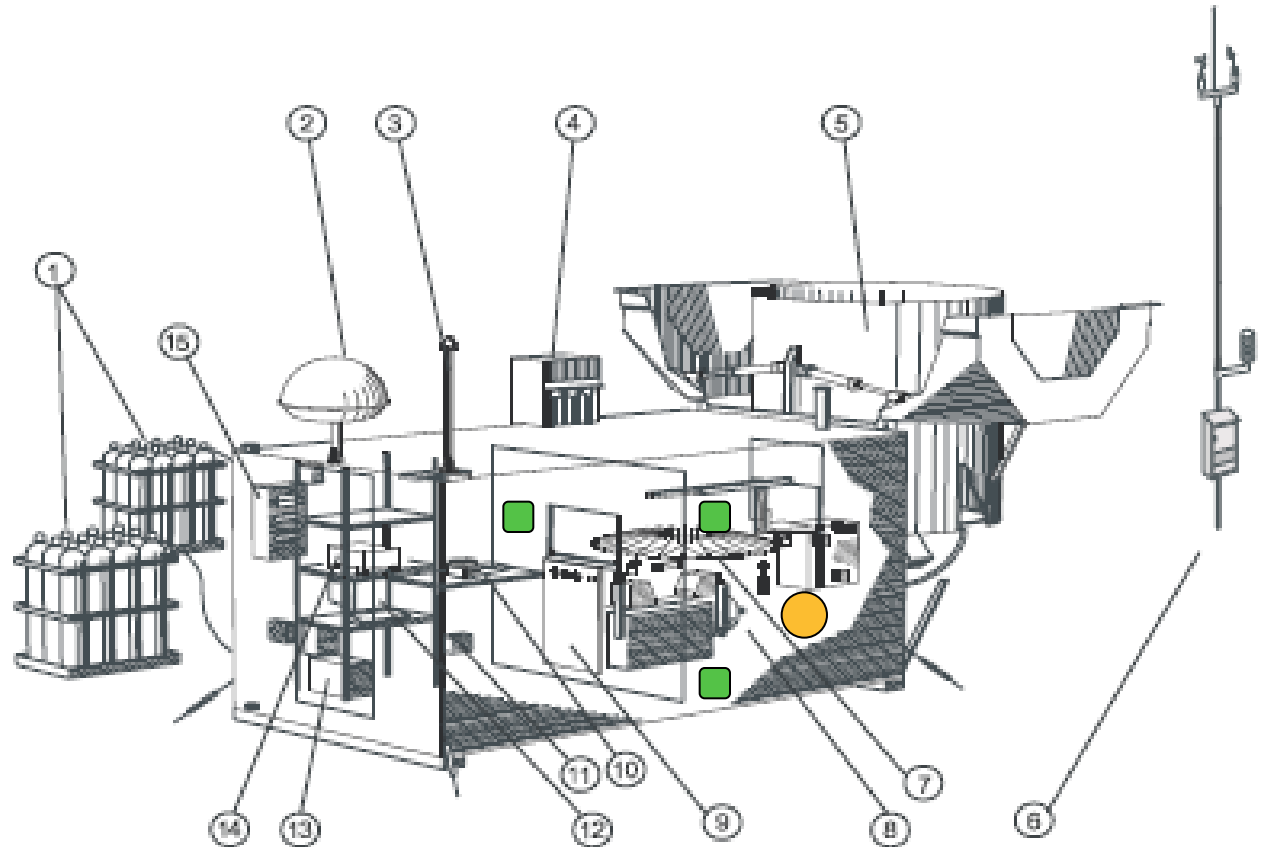
To this aim, Potenza autosonde (less constrained in terms of operational work than Sodankyla) will be used to test the following measurement protocol:

1. A reference hygrometer will be operated within the launch chamber to perform a GC before the launch (in the autosonde the GC is performed during the radiosonde loading only).
2. Small but enough accurate hygrometers will be used to measure the stability of the humidity field within the launch chamber to have a good metrological characterization of the uncertainty sources.



Possible experimental set-up

- 1 = Gas Banks
- 2 = UHF Antenna
- 3 = GPS Antenna
- 4 = Gas Measurement Unit
- 5 = Launcher Vessel
- 6 = Automatic Weather Station, MAWS
- 7 = Daisywheel
- 8 = Radiosonde Storage and Preparation Module
- 9 = Logic Controller
- 10 = Ground Check Set
- 11 = HMT Series Humidity/Temperature Transmitter
- 12 = Sounding Workstation
- 13 = UPS Power Supply
- 14 = Sounding Processing Subsystem
- 15 = Mains Distribution Box



● Reference Hygrometer

■ Small hygrometers



- Data will be collected using a secondary PC and submitted in a separate text files as happens for any additional thermometers used in the SHC? Does this sound reasonable for the LC?
- Need to define the time interval to perform the parallel measurements (after activation battery, before ballon filling).
- It will be implemented in the Potenza since next June – July.
- Costs: 2.5 KEuros for the reference hygrometer, and a few hundreds of euros for each of the small hygrometers.
- Use of SHC during the sonde loading?
- Further input from the audience?