



WMO/IOC/UNEP/ICSU  
GLOBAL CLIMATE OBSERVING  
SYSTEM (GCOS)

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**14th GRUAN Implementation-  
Coordination Meeting (ICM-14)**

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Session 5

La Réunion

28 November - 02 December 2022

## GRUAN Site Report for Syowa

*(Submitted by Yutaka Ogawa)*

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### **Summary and Purpose of this Document**

Report from the GRUAN site Syowa for the period January to December 2021.

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## **Overview**

Syowa is operated by Japan Meteorological Agency (JMA). Syowa contributes to GRUAN with the operational data streams of RS-11G radiosonde (2 times per day) and GNSS IPW. Syowa additionally conducts surface observation, ECC ozonesonde observation, CFH observation, total column ozone observation with a Dobson ozone spectrophotometer, ultraviolet observation with a Brewer spectrophotometer, radiation observation and greenhouse-gases observation. Syowa conducts ground check in SHC at 0% and 100%RH similarly to Tateno and Minamitorishima before launching RS-11G radiosondes.

## **Change and change management**

Balloon Launch point was once changed from the old deck to the new one in February 2021, but Syowa started to use the old one again from March due to the trouble of the new facility.

## **Resourcing**

Price of Helium gas is increasing year by year.

## **Operations**

During winter seasons, balloon burst point tends to decrease due to extremely low temperature. Syowa deals with this problem with kerosene dipping of balloons every year.

## **Covid-19**

NIL.

## **Site assessment and certification**

Preparation for site certification of Syowa is in progress by JMA.

## **GRUAN-related research**

NIL.

## **WG-GRUAN interface**

NIL.

## **Other archiving centres**

- Total ozone and ozonesonde observation: WOUDC (GAW)
- Surface ozone observation: WDCRG (GAW)
- Radiation observation: WRMC (BSRN)

## **Participation in campaigns**

Intercomparison soundings of RS11G-iMS100 was conducted 12 times in 2021, throughout a year. Test flight of SKYDEW was made in July, 2021.

## **Future plans**

Syowa retried changing the place of radiosonde launch point from the old deck to the new one in 2022 after fixing the new facility.



# GRUAN Site Report for Syowa (SYO), 2021

Reported time range is Jan 2021 to Dec 2021

Created by the Lead Centre

Version from 2022-11-15

## 1 General GRUAN site information

| Object                | Value                             |
|-----------------------|-----------------------------------|
| Station name          | Syowa                             |
| Unique GRUAN ID       | SYO                               |
| Geographical position | -69.0100 °S, 39.5800 °E, 25.5 m   |
| Operated by           | JMA   Japan Meteorological Agency |
| Main contact          | Ogawa, Yutaka                     |
| WMO no./name          | 89532 SYOWA                       |
| Operators             | currently 10, changes +10 / -5    |
| Sounding Site         | 1                                 |
| GNSS                  | 1                                 |

### 1.1 General information about GRUAN measurement systems

| System    | Name                                 | Type          | Setups | Measurements |
|-----------|--------------------------------------|---------------|--------|--------------|
| SYO-GN-01 | GNSS site SYOG                       | GNSS          | 1      | operational  |
| SYO-RS-01 | Syowa Station Radiosonde Launch Site | Sounding Site | 4      | 712          |

### 1.2 General comments from Lead Centre

#### 1.2.1 Dataflow

Dataflow was established in 2018.

## 2 System: GNSS site SYOG (SYO-GN-01)

| <b>Object</b>         | <b>Value</b>                      |
|-----------------------|-----------------------------------|
| System name           | GNSS site SYOG                    |
| Unique GRUAN ID       | SYO-GN-01                         |
| System type           | GNSS (GN - GNSS)                  |
| Geographical position | -69.0025 °S, 39.3501 °E, 50.1 m   |
| Operated by           | JMA   Japan Meteorological Agency |
| Instrument contact    | Ogawa, Yutaka                     |
| Started at            | -                                 |
| Defined setups        | 1 (HOURLY)                        |
| Possible streams      | -                                 |

### 2.1 Lead Centre comments

#### 2.1.1 Dataflow

No GNSS dataflow to LC has been established yet.

### 3 System: Syowa Station Radiosonde Launch Site (SYO-RS-01)

| Object                | Value                                 |
|-----------------------|---------------------------------------|
| System name           | Syowa Station Radiosonde Launch Site  |
| Unique GRUAN ID       | SYO-RS-01                             |
| System type           | Sounding Site (RS - Radiosonde)       |
| Geographical position | -69.0053 °S, 39.5811 °E, 21.6 m       |
| Operated by           | JMA   Japan Meteorological Agency     |
| Instrument contact    | Ogawa, Yutaka                         |
| Started at            | 1959-01-01                            |
| Defined setups        | 4 (ROUTINE, ROUTINE2, RESEARCH, DUAL) |
| Possible streams      | CFH, ECC, IMS-100, RS-11G             |

#### 3.1 Lead Centre comments

##### 3.1.1 Change management

Sporadic twin soundings with RS-11G and IMS-100 were performed and submitted to the GRUAN LC since March 2021.

##### 3.1.2 Dataflow

Sonde dataflow to the GRUAN LC is operational since September 2018.

##### 3.1.3 General

Routine soundings are performed two times per day. The operational radiosonde is the Meisei RS-11G.

Currently, the dataflow includes streams of the Meisei RS-11G, IMS-100, and CFH water vapour. All launches are promptly recorded using the RsLaunchClient.

A regular measurement program for the observation of stratospheric water vapor was started using CFH.

#### 3.2 GRUAN data products

| Product | Version | Soundings received | Available at LC | Distributed by NCEI |
|---------|---------|--------------------|-----------------|---------------------|
|---------|---------|--------------------|-----------------|---------------------|

##### 3.2.1 Stream: CFH

|     |  |   |   |  |
|-----|--|---|---|--|
| CFH |  | 2 | 2 |  |
|-----|--|---|---|--|

##### 3.2.2 Stream: IMS-100

|              |     |   |   |  |
|--------------|-----|---|---|--|
| IMS-100      |     | 9 | 9 |  |
| IMS-100-BETA | 002 |   | 8 |  |
| IMS-100-GDP  | 002 |   | 8 |  |

##### 3.2.3 Stream: RS-11G

|             |     |     |     |  |
|-------------|-----|-----|-----|--|
| RS-11G      |     | 713 | 713 |  |
| RS-11G-BETA | 002 |     | 562 |  |
| RS-11G-GDP  | 001 |     | 684 |  |

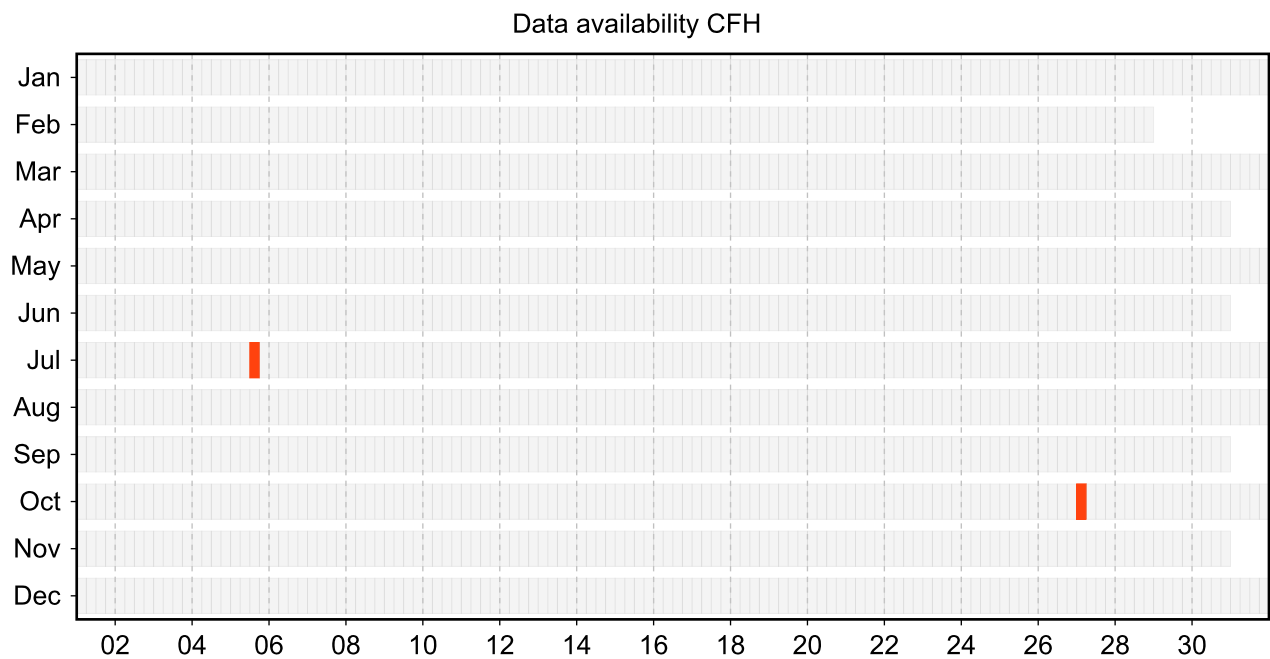
### 3.3 Availability of data products

Available (green): All steps of data processing have been successfully completed. The data product file is available at LC (e.g. files that didn't pass QA/QC or uncertified GRUAN data products) and/or at NCEI (a certified GRUAN data product file that did pass QA/QC).

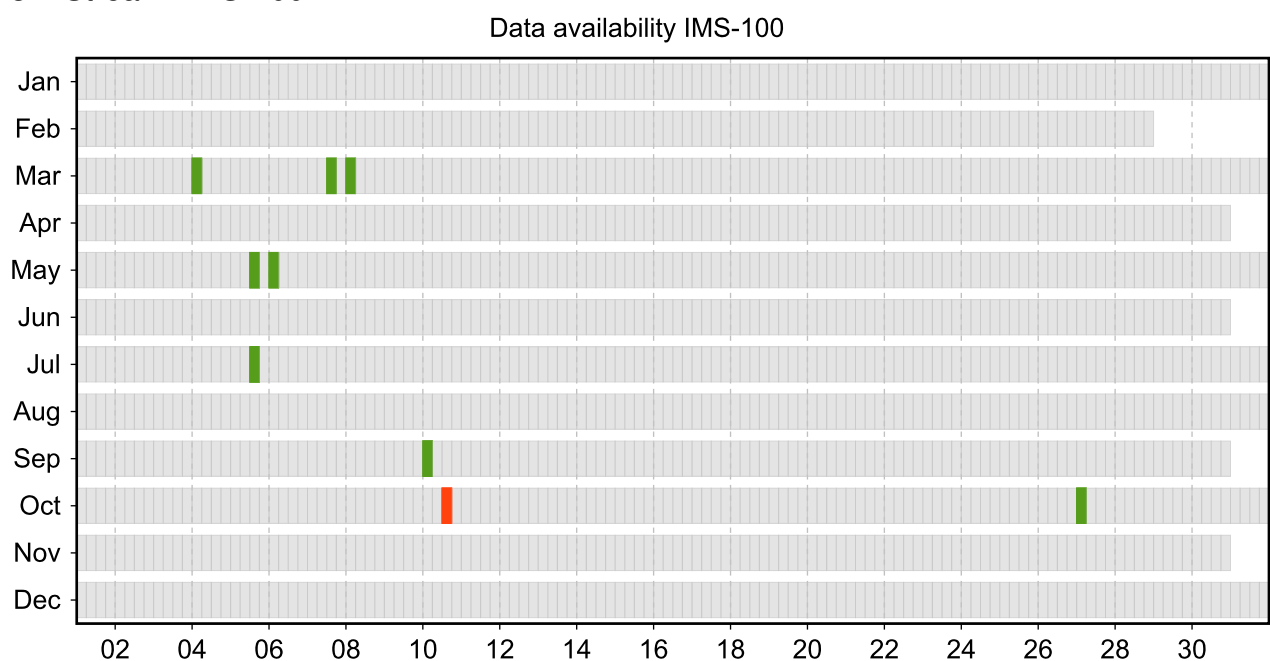
Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software error.

Original (red): The original, manufacturer-produced, raw data file is available (e.g. MWX data file) but was not converted into a GRUAN-standardized raw data format (NetCDF). Reasons for this may be missing data conversion software, a software error, or a corrupt data file.

#### 3.3.1 Stream: CFH



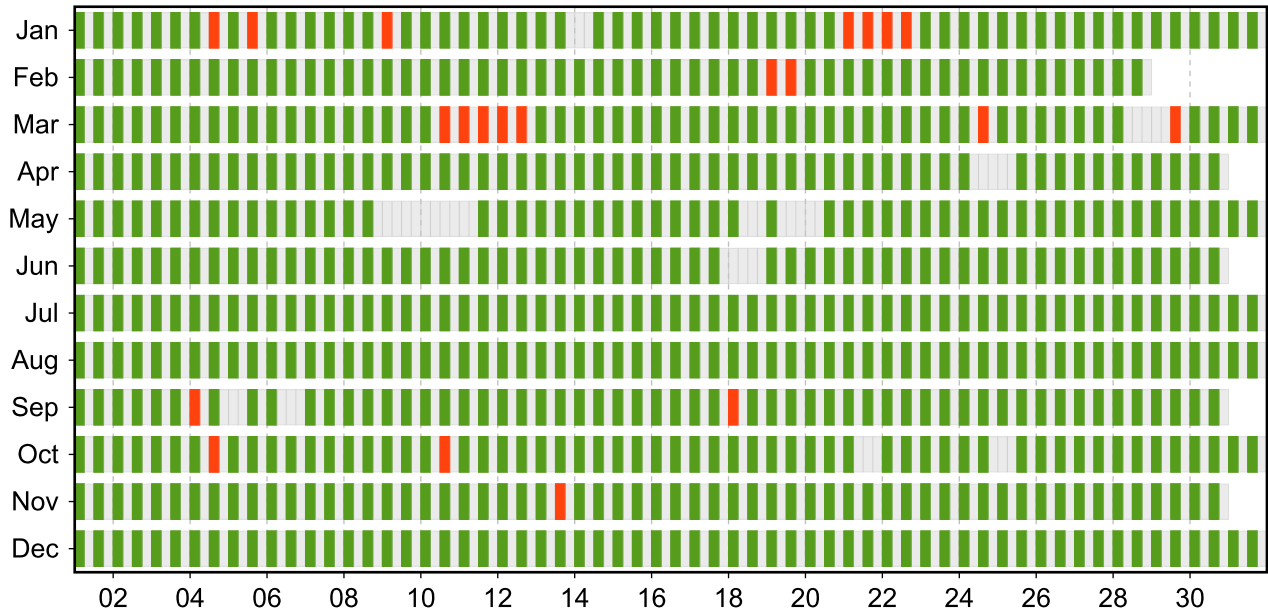
#### 3.3.2 Stream: IMS-100





3.3.3 Stream: RS-11G

Data availability RS-11G



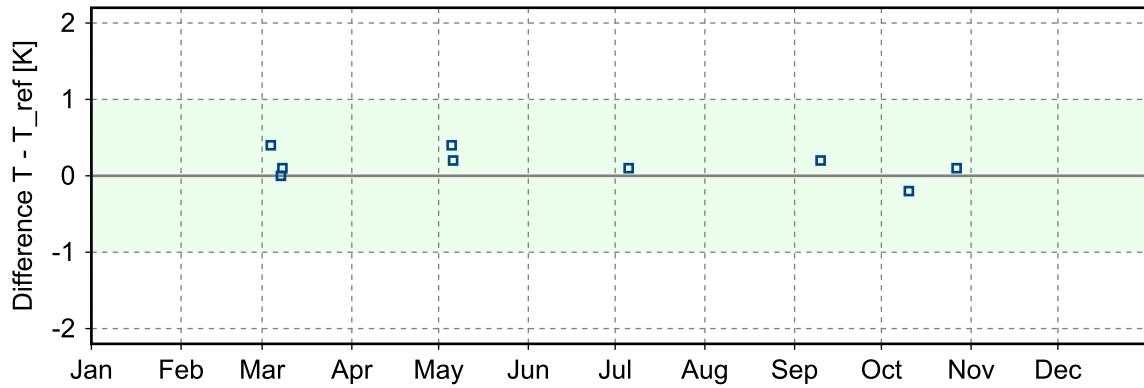
3.4 Instrument combinations of SYO-RS-01

| Count | Instrument combination  |
|-------|-------------------------|
| 1     | CFH, IMS-100, 2x RS-11G |
| 1     | CFH, IMS-100, RS-11G    |
| 7     | IMS-100, RS-11G         |
| 703   | RS-11G                  |

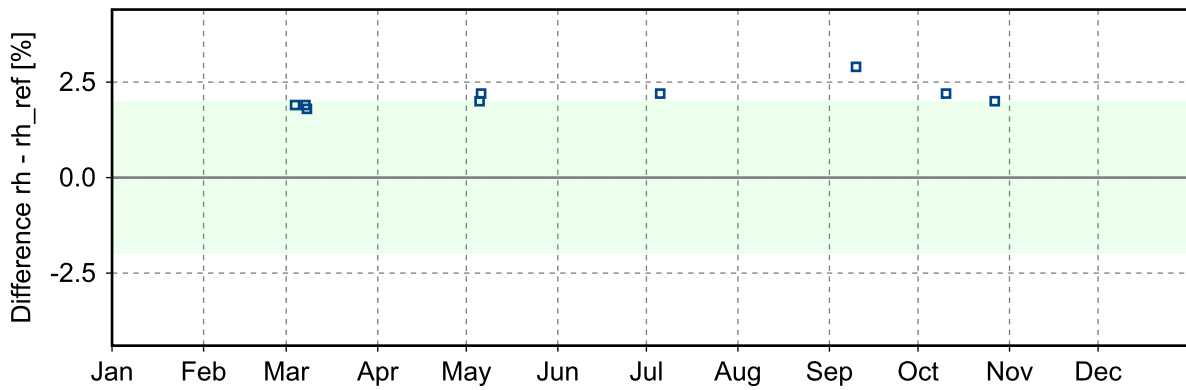
### 3.5 Instrument ground check

#### 3.5.1 Stream: IMS-100

##### (1) GroundCheck: GC-TU(0)

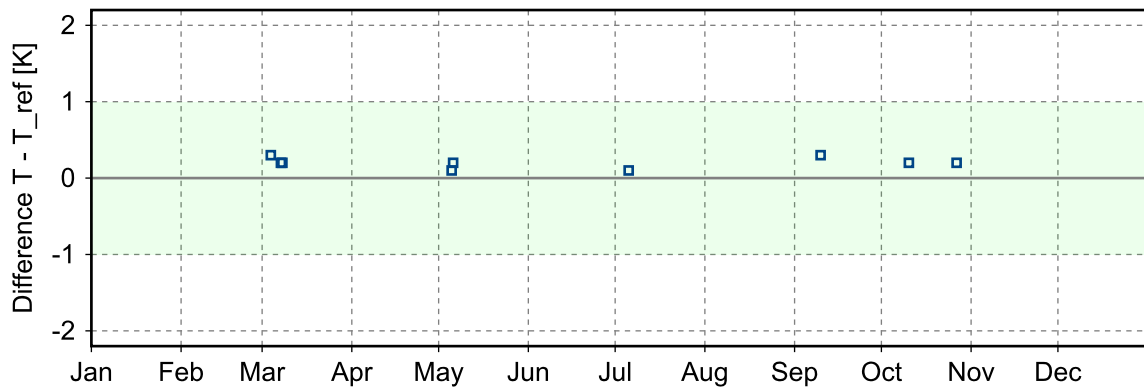


all SN

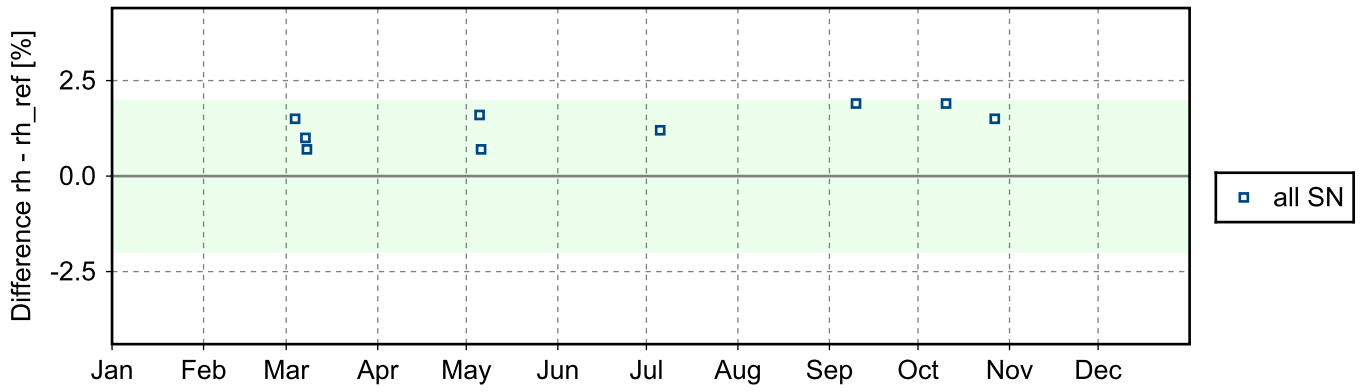


all SN

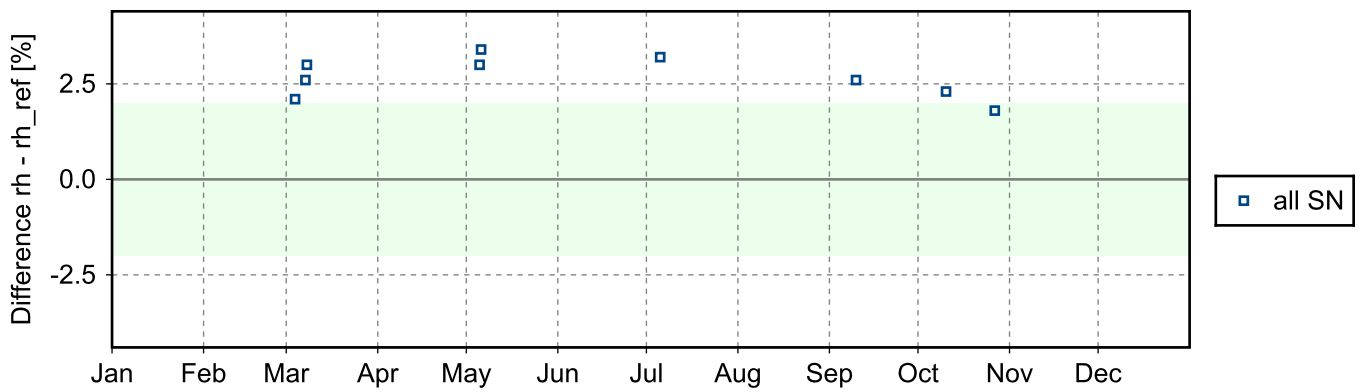
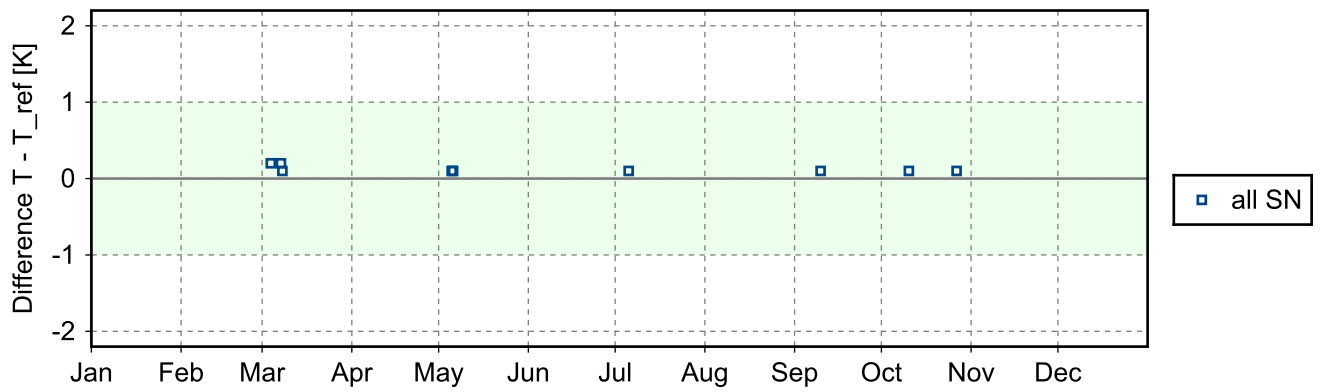
##### (2) GroundCheck: GC-TU(100)



all SN

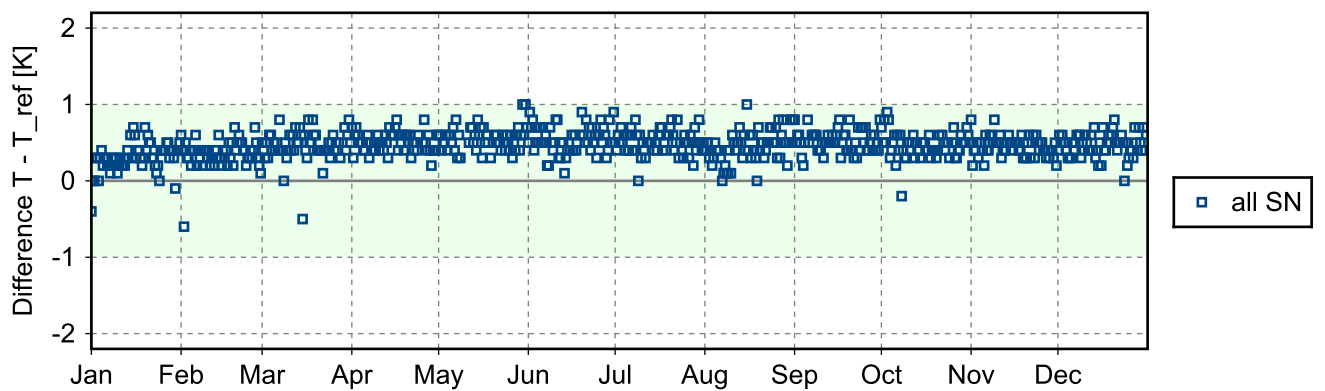


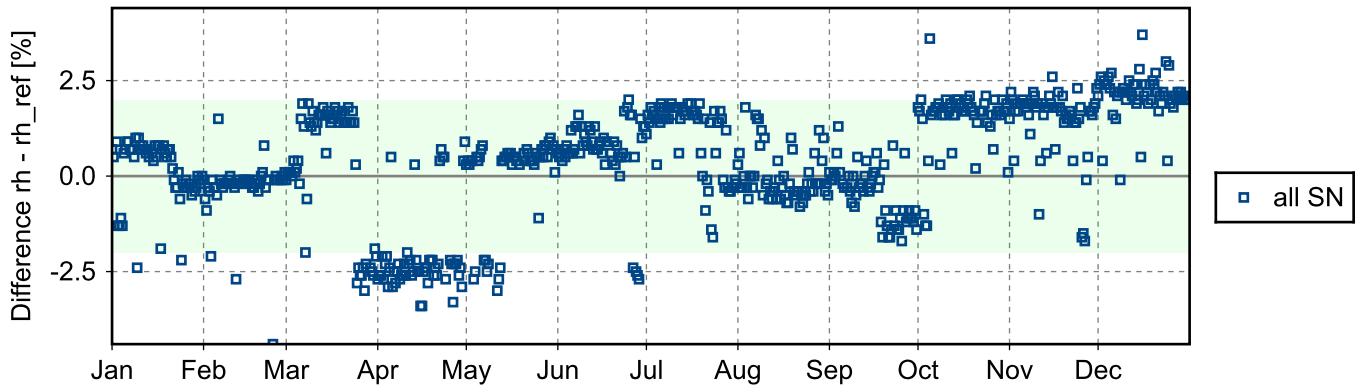
**(3) GroundCheck: GC-TU(room)**



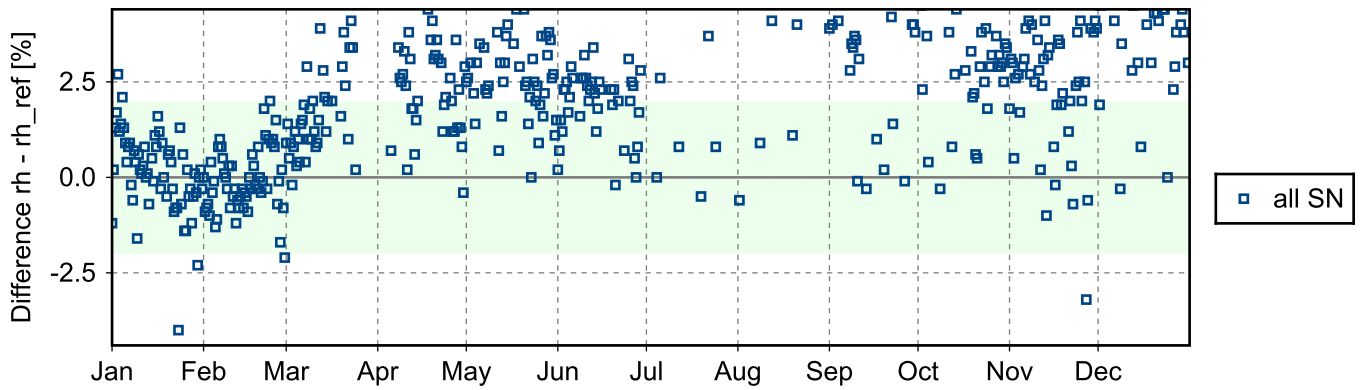
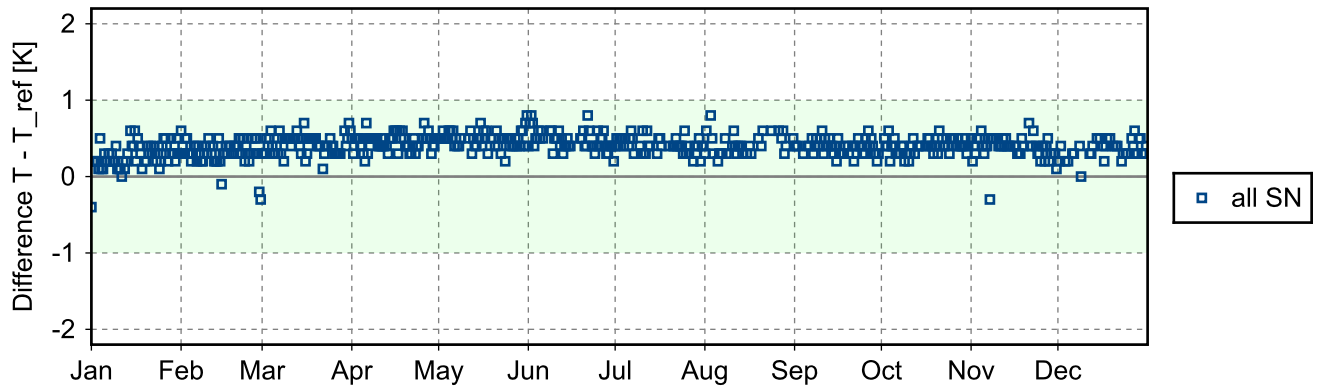
**3.5.2 Stream: RS-11G**

**(1) GroundCheck: GC-TU(0)**

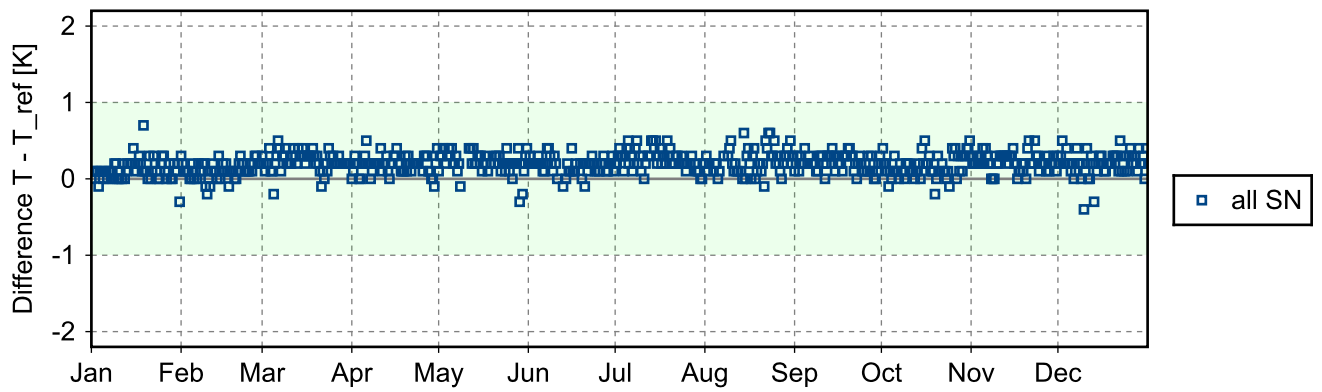


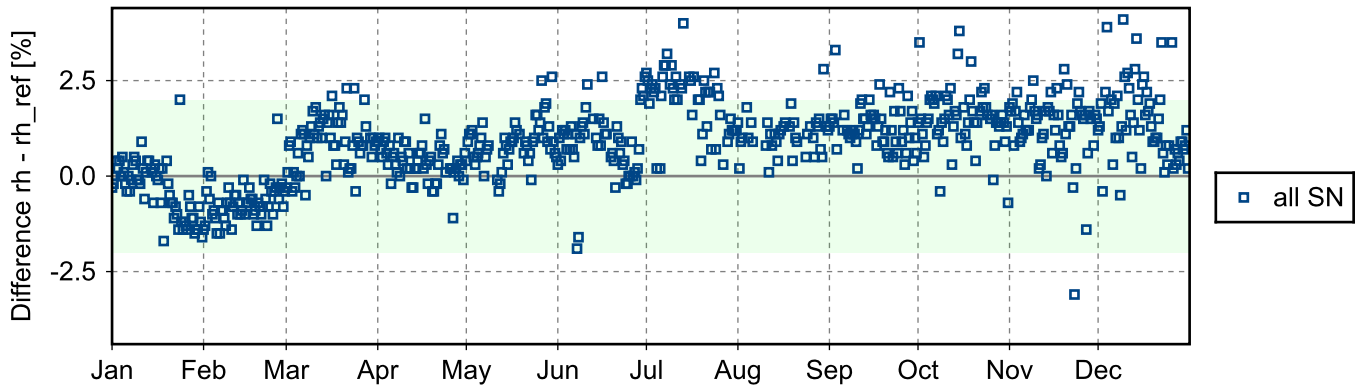


(2) GroundCheck: GC-TU(100)



(3) GroundCheck: GC-TU(room)





### 3.6 Measurement events

