



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 Tateno

*(Submitted by Hisamitsu Junji)*

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

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

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## **Overview**

Tateno contributes to GRUAN with twice-daily radiosonde observations, weekly dual-flight observations with Meisei and Vaisala radiosondes, several times a year multi-payload flight observations, and operational GNSS IPW data streams. The type of radiosonde for daily use is RS41-SG, radiosonde for comparison is RS41-SGP, RS41-SG, RS-11G, iMS-100, CFH, SKYDEW or MTR. Other activities at Tateno include ground-based meteorological observations, ECC ozone sonde observations, ozone observations using the Dobson ozone spectrophotometer and Brewer spectrophotometer, UV observations using the Brewer spectrophotometer, and radiation observations. RS41 and iMS-100 are subject to manufacturer-independent ground check is performed in an SHC at 0%RH and 100%RH prior to launch.

## **Change and change management**

CFH observations were terminated in May.

## **Resourcing**

We continue to be asked to significantly reduce the cost of observations.

## **Operations**

Tateno can't operate dual-flight or special radiosondes like SKYDEW in the summer because of safety problem that balloon/equipment fall to urban.

## **Covid-19**

NIL

## **Site assessment and certification**

Tateno was GRUAN-certified (for the RS92 measurement program) in April 2018.

## **GRUAN-related research**

- Intercomparison observations between iMS-100 and RS41-SG were conducted once a week except for the summer period.

- Intercomparison of SKYDEW with iMS100, RS-11G, and RS41-SG in November.
- Preparing for the revision of GRUAN-TD-5 and certification of iMS-100.
- Comparison observations with iMS-100 and RS41-SGP once a month.

## **WG-GRUAN interface**

- Tateno is a center that processes the GDP of RS-11G and iMS-100.
- IWABUCHI Masami is a member of GRUAN task team radiosondes.

## **Other archiving centres**

TATENO

- Total ozone and ozonesonde observation: WOUDC (GAW)
- Radiation observation: WRMC (BSRN), WRDC (GAW)

## **Participation in campaigns**

NIL

## **Future plans**

The automatic radiosonde launcher is going to be introduced in February 2023, and cloud observations are going to be terminated excepting the ozonesonde and comparison soundings.



# GRUAN Site Report for Tateno (TAT), 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	Tateno
Unique GRUAN ID	TAT
Geographical position	36.0581 °N, 140.1258 °E, 27.4 m
Operated by	JMA   Japan Meteorological Agency
Main contact	Hisamitsu, Junji
WMO no./name	47646 TATENO
Operators	currently 25, changes +1 / -3
Sounding Site	1
GNSS	2

### 1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
TAT-GN-01	GNSS Site TATN	GNSS	1	operational
TAT-GN-02	GNSS Site TSK2	GNSS	1	operational
TAT-RS-01	Tateno Radiosonde Launch Site	Sounding Site	12	743

### 1.2 General comments from Lead Centre

#### 1.2.1 General

For the ECC ozone sondes it is recommended that the site submits the meta-data and raw data to the Lead Centre in preparation for the planned ozone GRUAN data product.

## 2 System: GNSS Site TATN (TAT-GN-01)

Object	Value
System name	GNSS Site TATN
Unique GRUAN ID	TAT-GN-01
System type	GNSS (GN - GNSS)
Geographical position	36.0573 °N, 140.1265 °E, 67.0 m
Operated by	JMA   Japan Meteorological Agency
Instrument contact	Hisamitsu, Junji
Started at	-
Defined setups	1 (HOURLY)
Possible streams	-

### 2.1 Lead Centre comments

#### 2.1.1 Dataflow

Dataflow of GNSS data to GRUAN LC and the GRUAN GNSS processing centre at GFZ has started in December 2018. The current dataflow includes only converted meteorological data (RINEX) and instrument logs, containing all equipment changes.

At moment, data are available from 2017.

The operational processing as GNSS-PW-GDP cannot be performed at moment.

### 3 System: GNSS Site TSK2 (TAT-GN-02)

<b>Object</b>	<b>Value</b>
System name	GNSS Site TSK2
Unique GRUAN ID	TAT-GN-02
System type	GNSS (GN - GNSS)
Geographical position	36.1056 °N, 140.0871 °E, 70.0 m
Operated by	JMA   Japan Meteorological Agency
Instrument contact	Hisamitsu, Junji
Started at	2020-11-01
Defined setups	1 (HOURLY)
Possible streams	-

#### 3.1 Lead Centre comments

##### 3.1.1 Dataflow

Dataflow of GNSS data to GRUAN LC and the GRUAN GNSS processing centre at GFZ has started in January 2020. The current dataflow includes instrument logs, containing all equipment changes.

The operational processing as GNSS-PW-GDP is performed.

## 4 System: Tateno Radiosonde Launch Site (TAT-RS-01)

Object	Value
System name	Tateno Radiosonde Launch Site
Unique GRUAN ID	TAT-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	36.0581 °N, 140.1258 °E, 24.8 m
Operated by	JMA   Japan Meteorological Agency
Instrument contact	Hisamitsu, Junji
Started at	-
Defined setups	12 (ROUTINE, COMPARE, ROUTINE2, DUAL, DUAL2, DUAL3, ROUTINE3, DUAL4, RESEARCH, DUAL5, DUAL6, ROUTINE4)
Possible streams	CFH, IMS-100, RS-11G, RS41, RS92

### 4.1 Lead Centre comments

#### 4.1.1 Change management

Regularly twin soundings with RS41 and IMS-100 were performed and submitted to the GRUAN LC since February 2020.

#### 4.1.2 Dataflow

Sonde dataflow to the GRUAN LC is operational since June 2011.

Currently, the dataflow includes streams of Vaisala RS41, Meisei IMS-100 and RS-11G. All launches are promptly submitted using the RsLaunchClient.

#### 4.1.3 General

Routine soundings are performed two times per day. Meisei iMS-100 have been used as redundant sonde during weekly dual soundings since February 2020.



## 4.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
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### 4.2.1 Stream: IMS-100

IMS-100		63	63	
IMS-100-BETA	001		13	
IMS-100-BETA	002		63	

### 4.2.2 Stream: RS-11G

RS-11G		3	3	
RS-11G-BETA	002		2	
RS-11G-GDP	001		3	

### 4.2.3 Stream: RS41

RS41		738	738	
RS41-RAW	001		738	
RS41-EDT	001		737	
RS41-GDP	001		736	
RS41-GDP-BETA	002		366	
RS41-GDP-BETA	003		630	

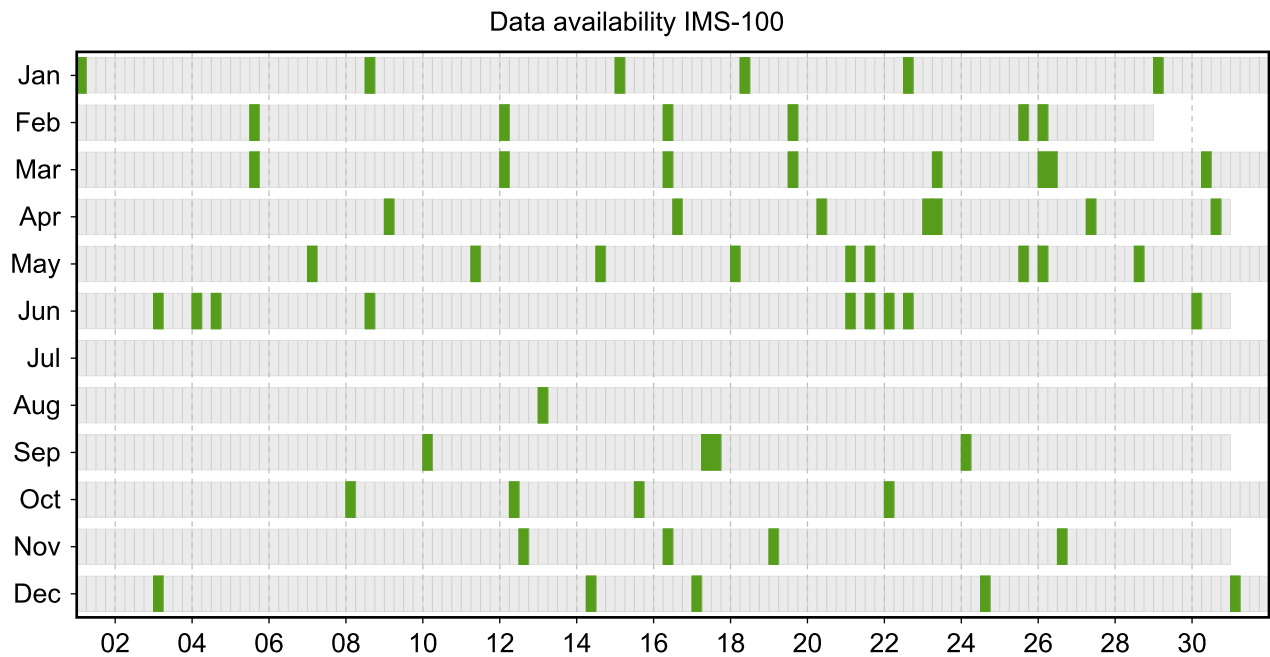
### 4.3 Availability of data products

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).

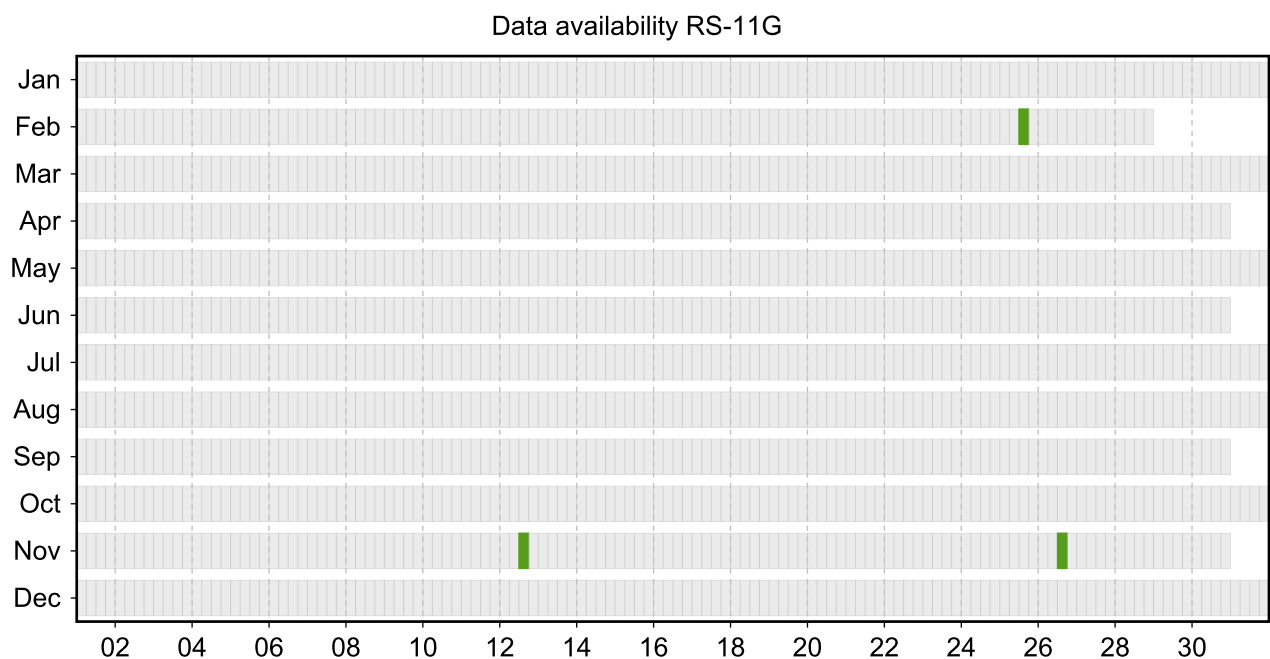
Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software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

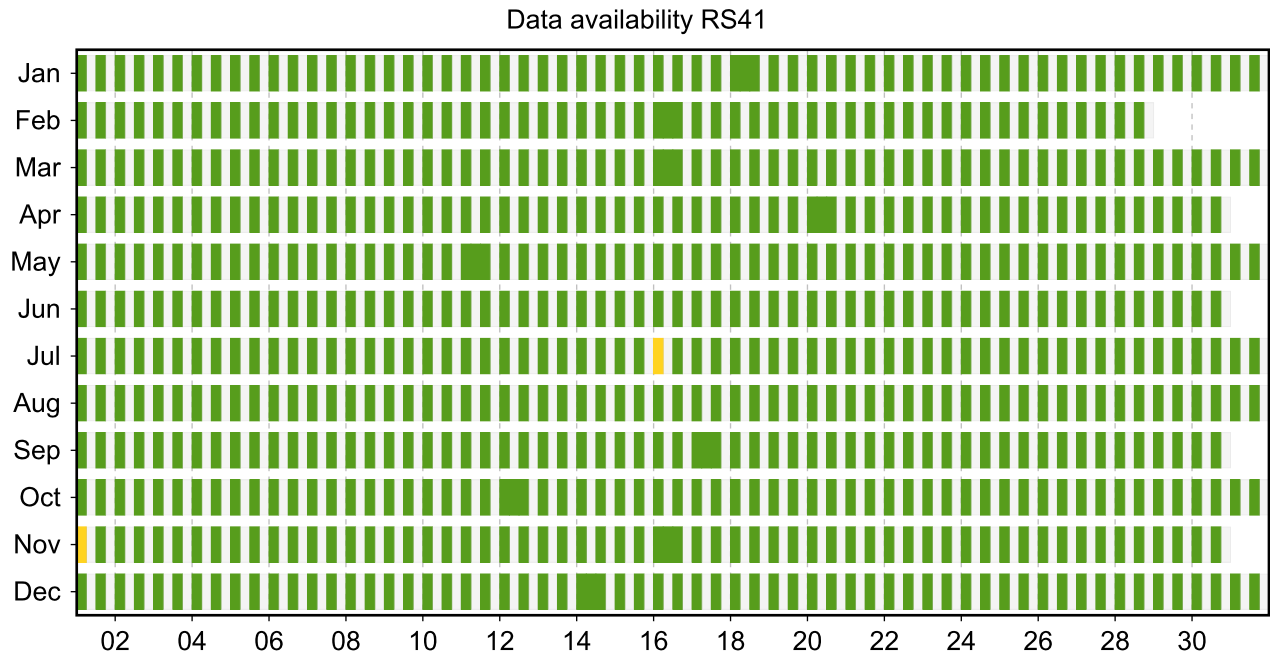
#### 4.3.1 Stream: IMS-100



#### 4.3.2 Stream: RS-11G



4.3.3 Stream: RS41



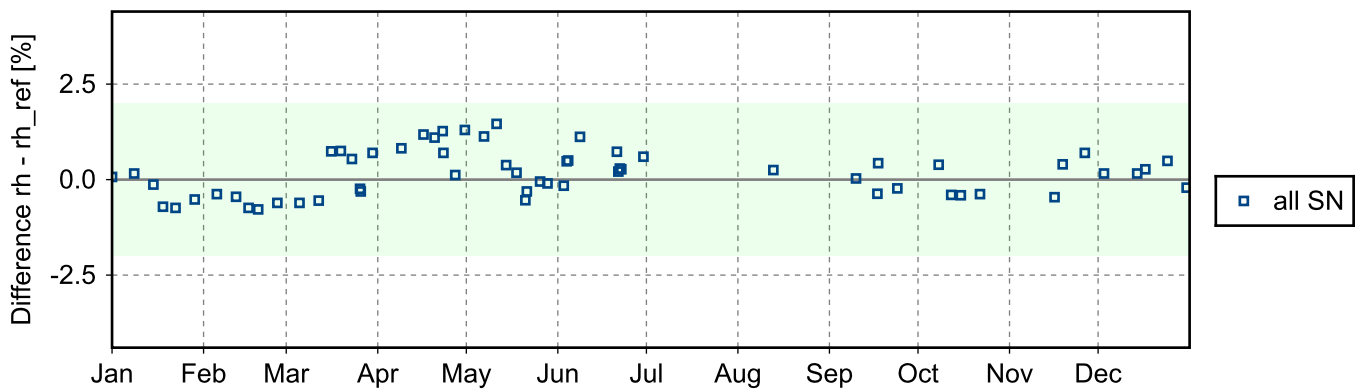
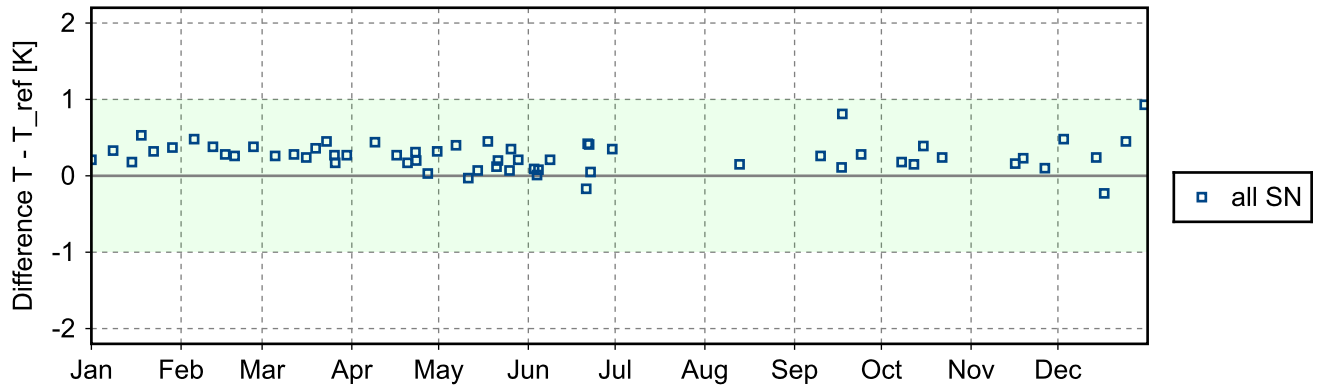
4.4 Instrument combinations of TAT-RS-01

Count	Instrument combination
5	IMS-100
3	IMS-100, RS-11G, RS41
55	IMS-100, RS41
680	RS41

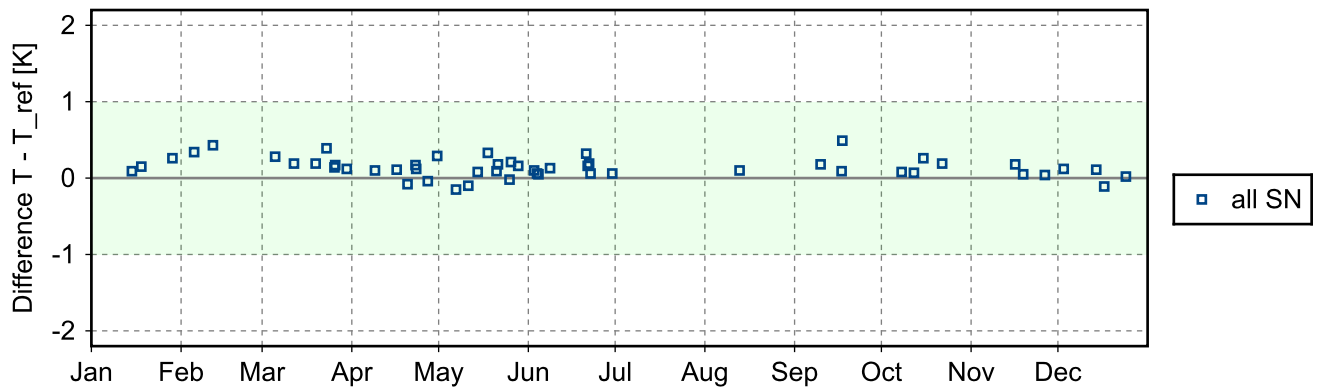
### 4.5 Instrument ground check

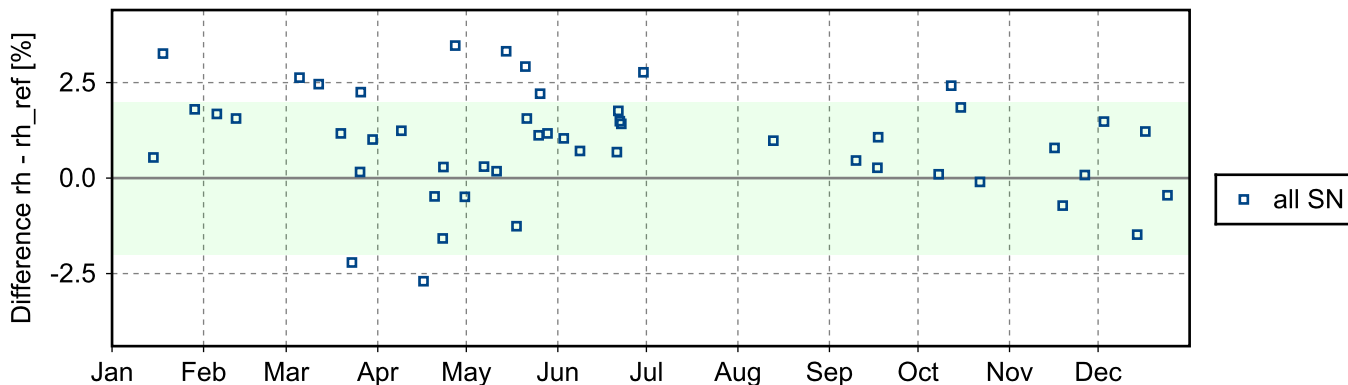
#### 4.5.1 Stream: IMS-100

(1) GroundCheck: GC-TU(0)

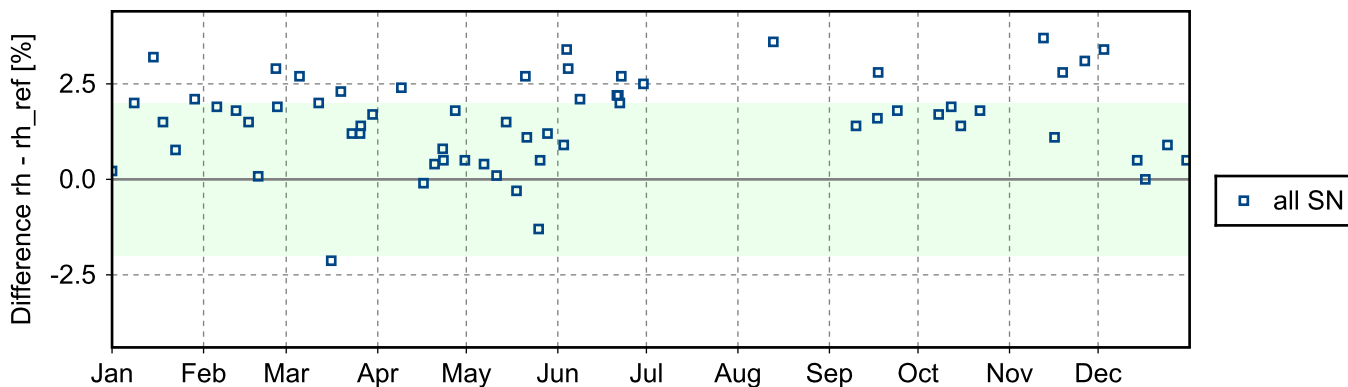
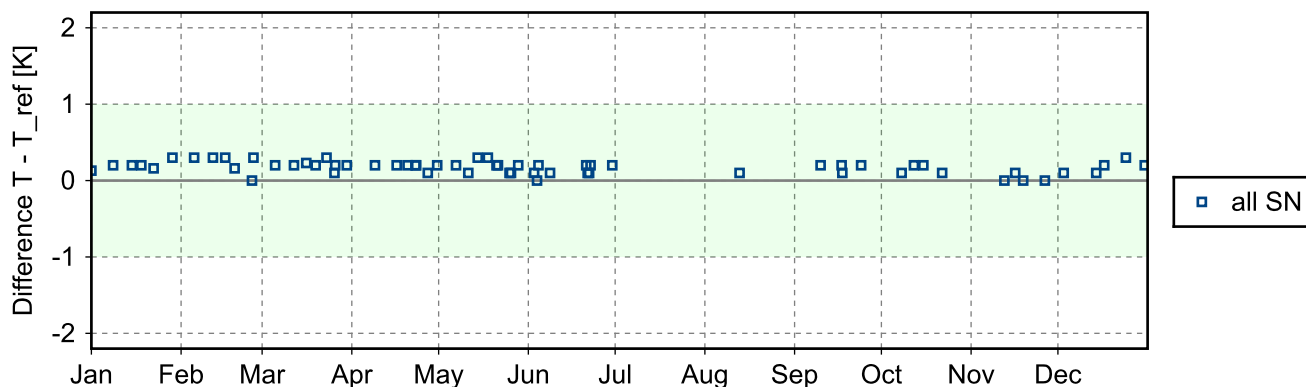


(2) GroundCheck: GC-TU(100)



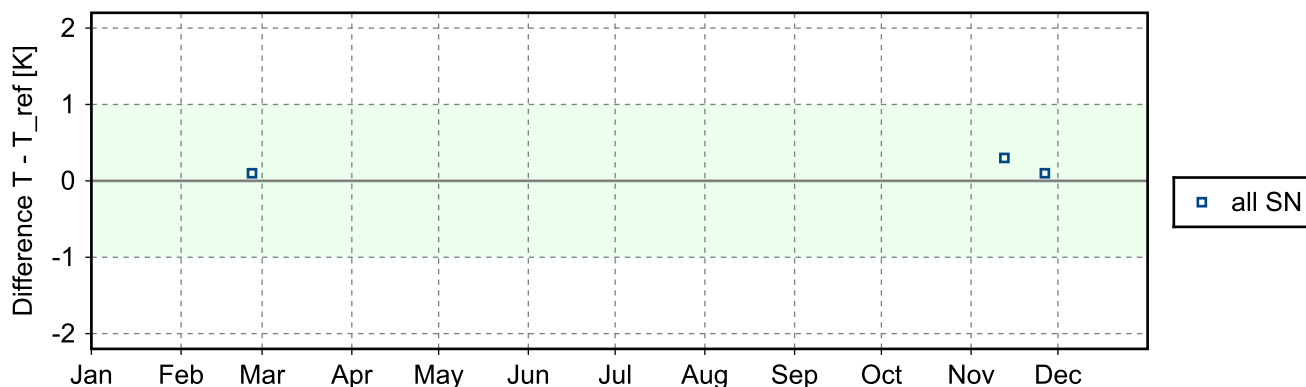


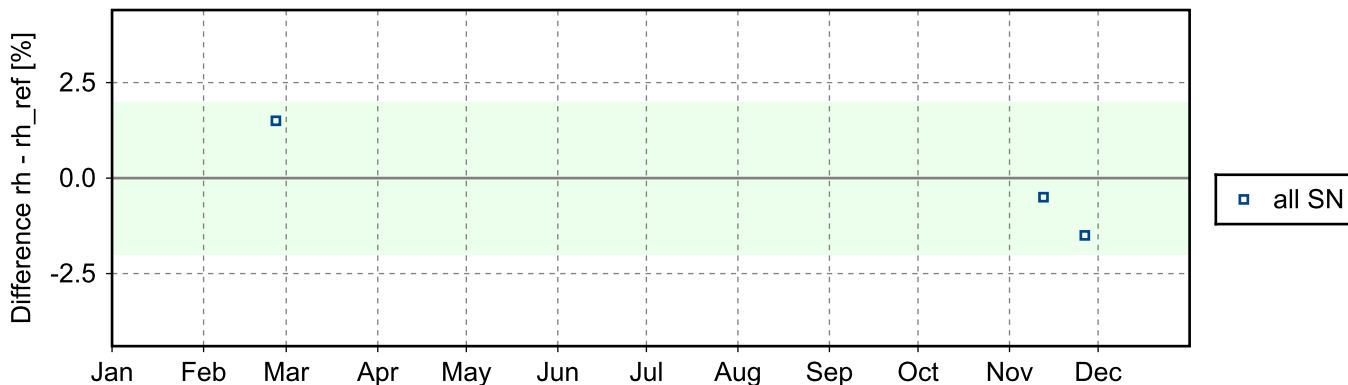
**(3) GroundCheck: GC-TU(room)**



**4.5.2 Stream: RS-11G**

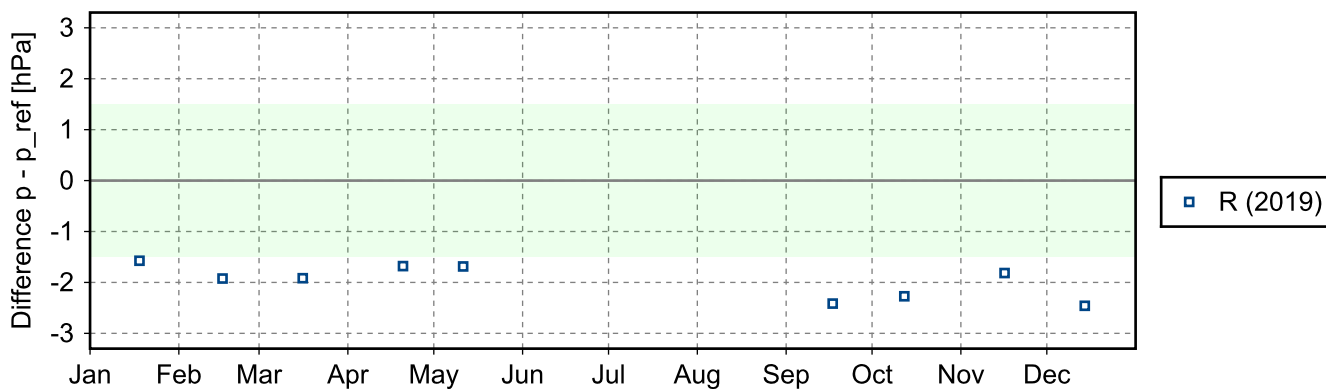
**(1) GroundCheck: GC-TU(room)**



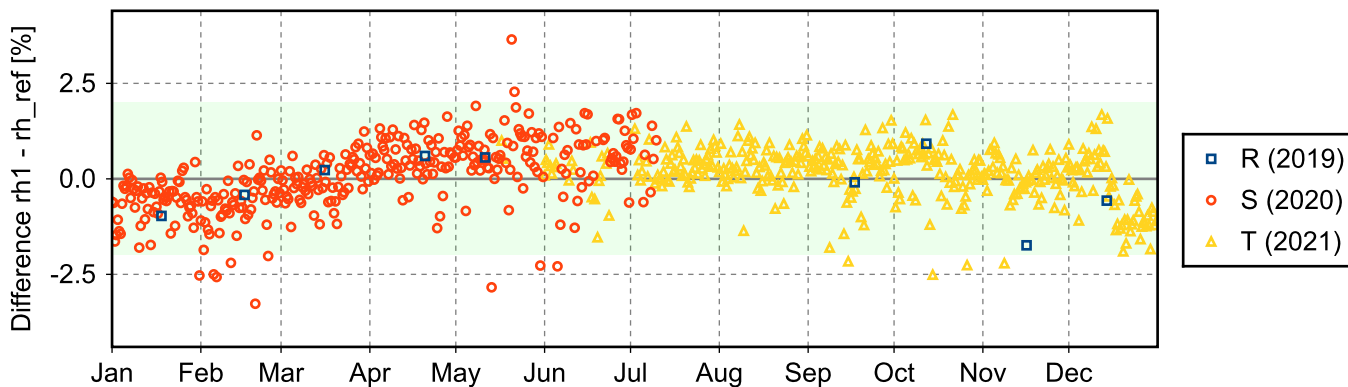
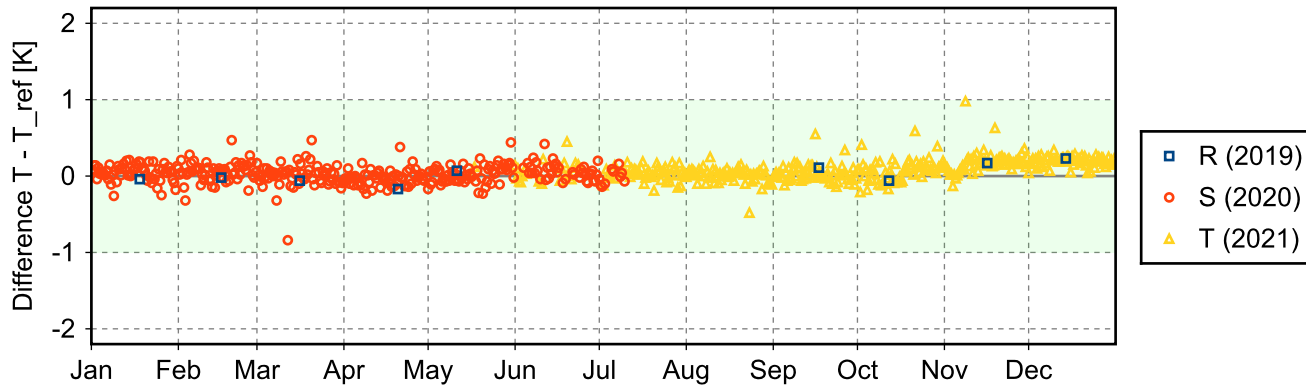


### 4.5.3 Stream: RS41

#### (1) GroundCheck: GC-RI41



#### (2) GroundCheck: GC-SHC



### 4.6 Measurement events

