



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

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**9th GRUAN Implementation-  
Coordination Meeting (ICM-9)**

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Session 7

Helsinki, Finland

12 - 16 June 2017

## GRUAN Site Report for Tateno

*(Submitted by Kenji Suzuki)*

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

Report from the GRUAN site Tateno for the period March 2016 to April 2017.

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## Overview

The Tateno site, operated by the Aerological Observatory of the Japan Meteorological Agency (JMA), conducts surface observation and low-layer wind observation up to 1.5 km by using a Doppler LIDAR, upper-atmosphere observation up to about 30 km by using radiosondes, ozone vertical distribution observation using ozonesondes, total column ozone observation using a Dobson ozone spectrophotometer, ultraviolet observation using a Brewer spectrophotometer and radiation observation. Radiosonde sounding data are operationally provided to the GRUAN Lead Centre, and other observation data are sent after coordination with Lead Centre.

## Change and change management

The process of creating the RS-11G GDP was reported at ICM-7. The technical document of RS-11G (and iMS-100) that includes the process of creating the GDP is under construction on the assumption of submitting a paper.

In addition, the previous routine radiosonde (RS92-SGP) has been launched with RS-11G routine radiosonde, in order to evaluate each instruments by comparing both data. This dual-launch has been carried out at 00Z or 12Z on every Monday from April 2015 to March 2016, and on every Friday from April 2016.

The RS-11G GDP has already been created, and communication/upload test with the GRUAN Lead Centre was carried out in February 2016. This experiment process has been completed and is currently checked at the Lead Centre. After this check, Tateno will send a RS-11G GDP to the Lead Centre routinely, near future.

The measurement of surface ozone observation was terminated in January 2017, because the budget for renewing the aging surface ozone measurement system was rejected.

## Resourcing

NIL

## Operations

Although the observation using the RS-11G equipped with MTR and/or CFH was originally planned to be carried out twice every year for accuracy confirmation from October 2015, the plan has not been realized due to safety-related issues with balloon landings. Instead, after ICM-8, CFH was launched on April 2016 and MTR was launched on 6 October 2016.

## **Site assessment and certification**

Tateno is currently applying for site certification procedure. Relevant document required for the Site certification was sent to the GRUAN Lead Centre in April 2016.

JMA intends to proceed with procedures for registration of Minamitorishima and Syowa station as GRUAN sites.

## **GRUAN-related research**

NIL

## **WG-GRUAN interface**

NIL

## **Items for ICM-9 plenary discussions**

NIL

## **Future plans**

Meisei GDP: Tateno creates the GDP for Meisei radiosonde and sends to the "GRUAN Lead Centre", routinely. This GDP of a regular version is released from NCDI after authorizing the relevant technical document. Tateno also receives the data from other sites using the RS-11G or iMS-100 radiosonde, and creates GDPs for those sites.

GNSS: After solving the RINEX file format conversion issues, the RINEX file for GNSS data will be sent routinely to "GRUAN Lead Centre", near future.

Observation system: Tateno is planning to switch from RS-11G to iMS-100 in August 2017 and to switch from RS92 to RS41 in 2018.

The JMA's next sounding central system will be a centralized management system which contains data monitoring, data quality control, data storage and data reporting to GTS for all aerological observation sites. This system will start its operation in February 2018.



# GRUAN Station Report for Tateno (TAT), 2016/17

Reported time range is Mar 2016 to Apr 2017

Created by the Lead Centre

Version from 2017-06-06

## 1 General GRUAN station information

Info	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	Abo, Toshihiro
WMO no./name	47646 TATENO
Operators	current 25, change +5 / -8
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
TAT-GN-01	GNSS	0	not operational	not scheduled
TAT-RS-01	Sounding Site	5	794	93.08 %

### 1.2 General comments from Lead Centre

#### 1.2.1 General

Good communications between station and GRUAN LC.

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.

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

<b>Info</b>	<b>Value</b>
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	Abo, Toshihiro
Started at	-
Defined setups	-
Possible streams	-

### 2.1 Lead Centre comments

#### 2.1.1 Dataflow

No GNSS dataflow to GRUAN LC as yet.

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

Info	Value
System name	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	Abo, Toshihiro
Started at	-
Defined setups	5 (ROUTINE2, DUAL, ROUTINE, COMPARE, DUAL2)
Possible streams	RS-11G, RS92

#### 3.1 Lead Centre comments

##### 3.1.1 Change management

Weekly dual launches of RS92-SGP and RS-11G are performed and submitted to the GRUAN LC.

##### 3.1.2 Dataflow

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

Now, the dataflow includes streams of Meisei RS-11G and Vaisala RS92-SGP. All launches are promptly submitted using the RsLaunchClient.

#### 3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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##### 3.2.1 Stream: RS-11G

RS-11G		777	777	
RS-11G-GDP	001		692	

##### 3.2.2 Stream: RS92

RS92		58	58	
RS92-RAW	001		58	
RS92-RAW	002		58	
RS92-EDT	001		58	58
RS92-GDP	002		55	40

### 3.3 Data availability of data products

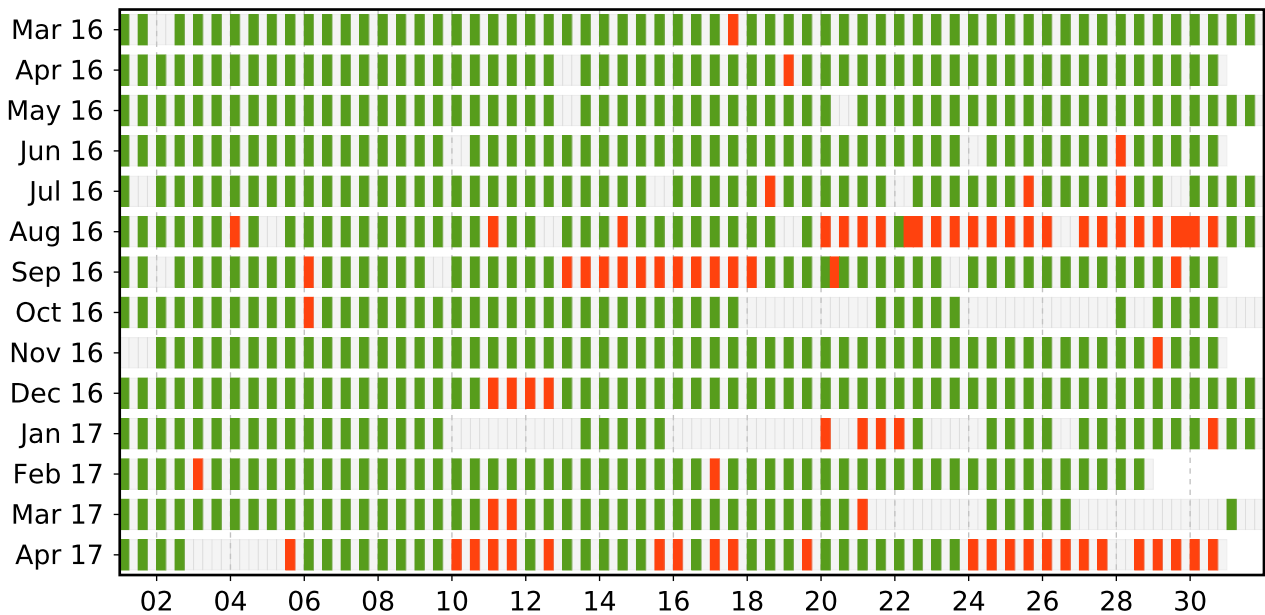
Available (green): All steps of processing have been successfully completed. The data file is available at NCEI (NCDC).

Unprocessed (yellow): The raw data file has been successfully converted to a GRUAN standardized raw data file format (NetCDF). The processing itself (e.g. extracting manufacturer data product or GRUAN data processing) is not done yet, or could not be completed. Reason may be missing raw data, or software bugs.

Failed (red): Raw data file could not be converted to a GRUAN standardized raw data file format (NetCDF). Reason may be a corrupt original raw data file, or software bugs.

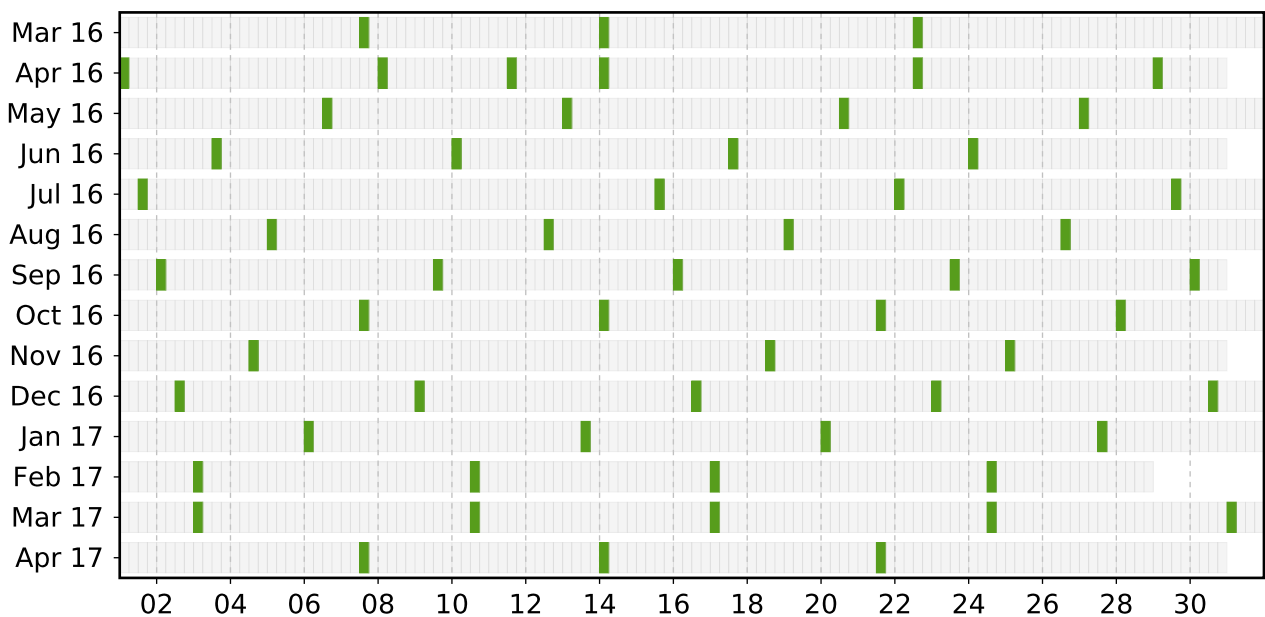
#### 3.3.1 Stream: RS-11G (Product: RS-11G-GDP-001)

Schedule data availability of stream RS-11G



#### 3.3.2 Stream: RS92 (Product: RS92-EDT-001)

Schedule data availability of stream RS92





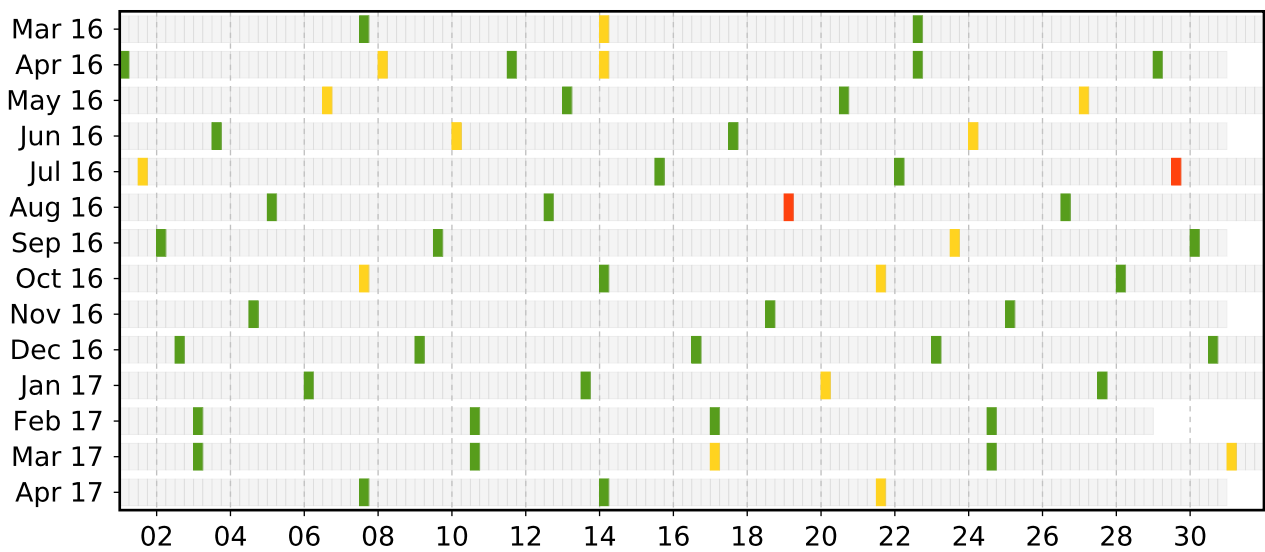
### 3.4 Data quality of current GRUAN data products

Month	Count	GRUAN Data Quality			Issues				
		Approved	Checked	Rejected	Meta-data	Process.	Press	Temp	RH

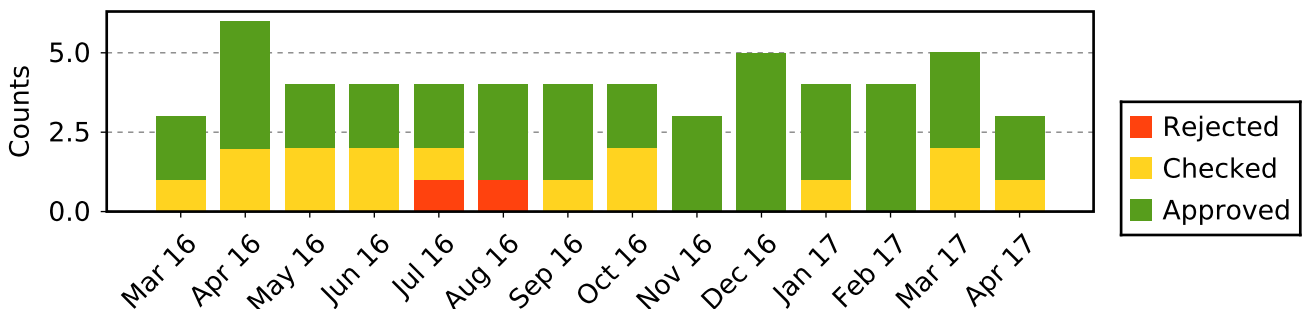
#### 3.4.1 Stream: RS92 (Product: RS92-GDP-002)

Mar 16	3	2	1						1
Apr 16	6	4	2						2
May 16	4	2	2						2
Jun 16	4	2	2				1		1
Jul 16	4	2	1	1			1		1
Aug 16	4	3		1			1		
Sep 16	4	3	1						1
Oct 16	4	2	2						2
Nov 16	3	3							
Dec 16	5	5							
Jan 17	4	3	1						1
Feb 17	4	4							
Mar 17	5	3	2				1		1
Apr 17	3	2	1						1
<b>57</b>	<b>40</b>	<b>15</b>	<b>2</b>				<b>4</b>		<b>13</b>

Schedule data quality of stream RS92



Data quality statistic of stream RS92



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### 3.5 Instrument combinations of TAT-RS-01

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<b>Count</b>	<b>Instrument combination</b>
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736	RS-11G
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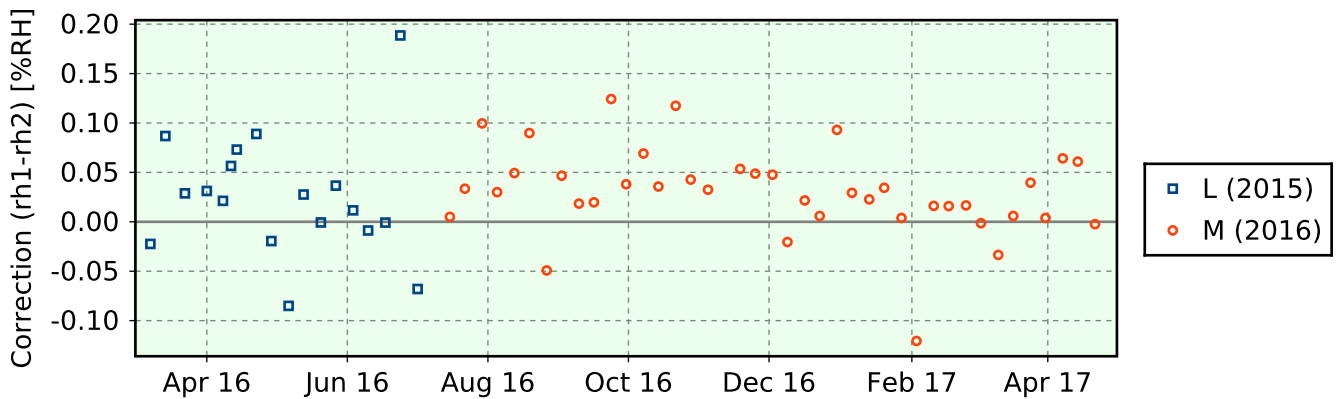
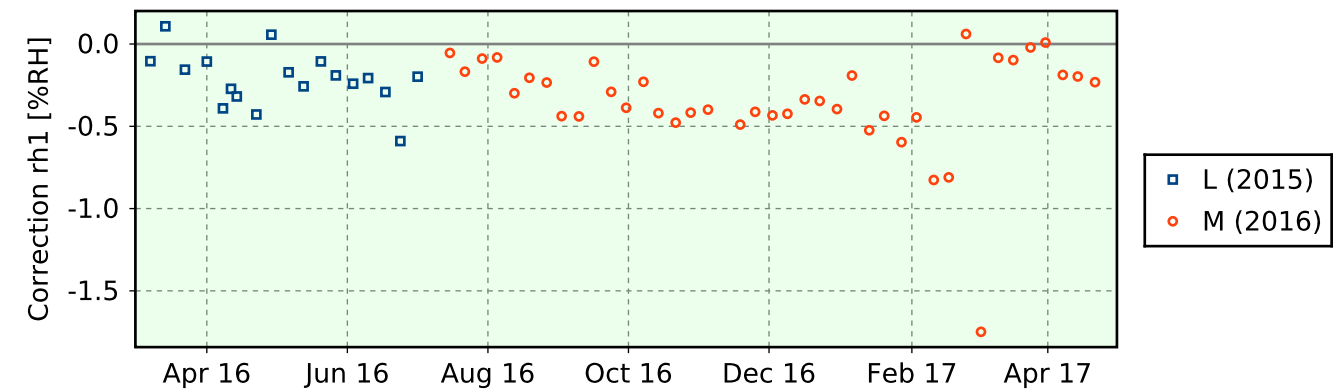
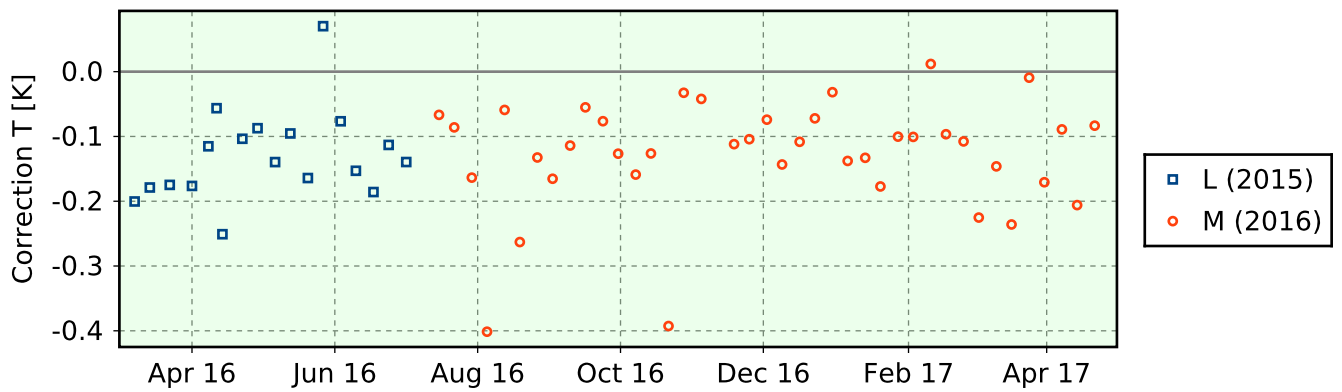
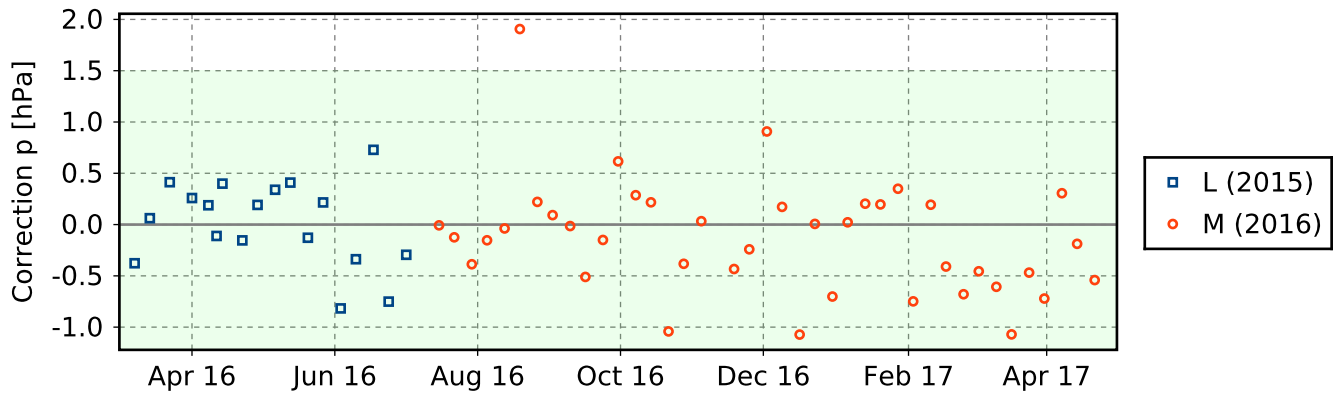
41	RS-11G, RS92
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17	RS92
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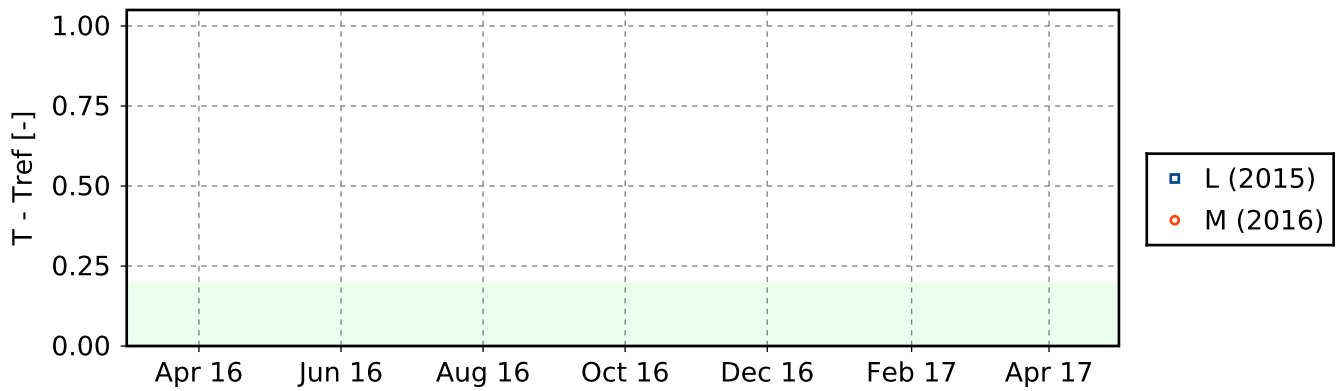
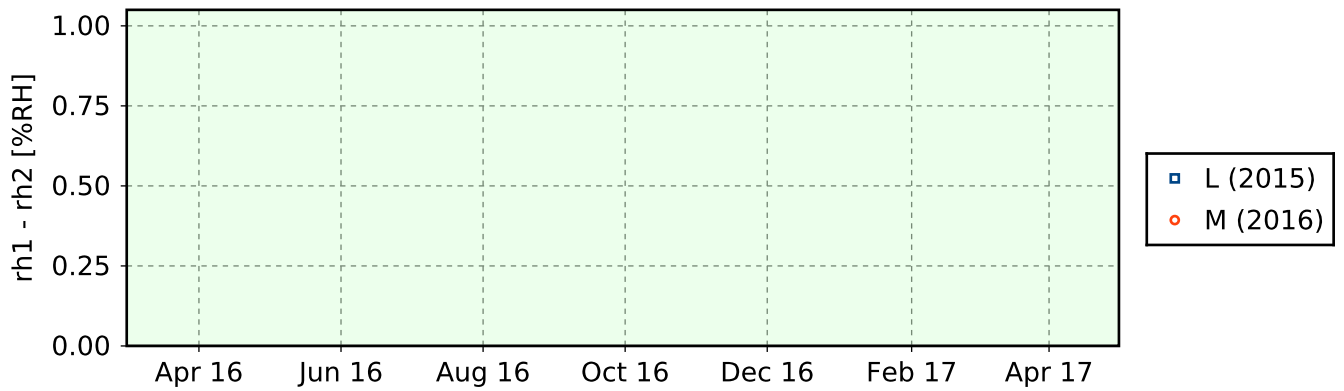
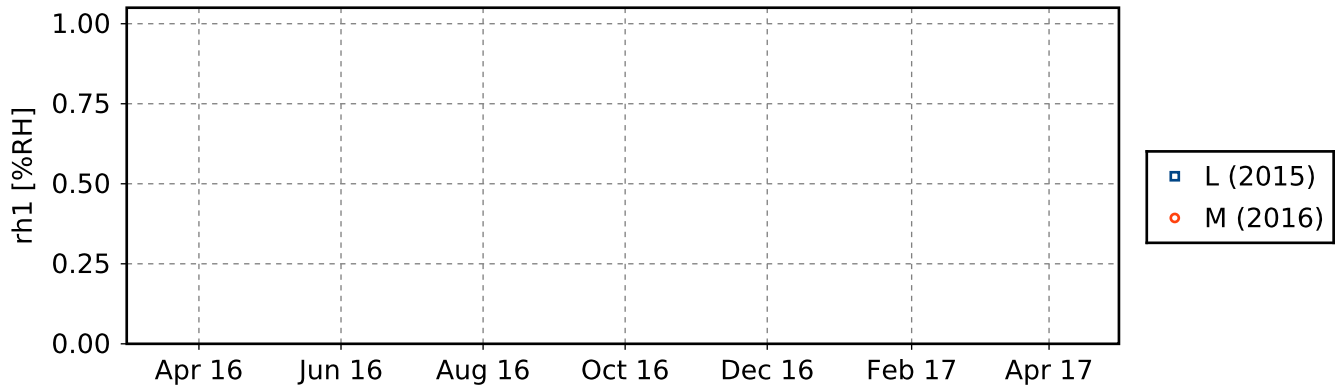
### 3.6 Instrument ground check

#### 3.6.1 Stream: RS92

##### 3.6.1.1 GroundCheck: GC25



3.6.1.2 GroundCheck: SHC



3.7 Measurement events

3.7.1 Stream: RS92

