



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

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**8th GRUAN Implementation-  
Coordination Meeting (ICM-8)**

Session 7

Boulder, USA  
25 April – 29 April 2016

## GRUAN Station Report for Tateno

*(Submitted by Nobuhiko Kizu)*

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### Summary and Purpose of Document

Report from the GRUAN station Tateno for the period March 2015 to March 2016.

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## GRUAN Station Report for Tateno (TAT)

Reporting for the period March 2015 to March 2016

Date: 22-Mar-2016

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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. Among these observations, radiosonde sounding data are operationally provided to the GRUAN Lead Centre, and other observations will be sending after coordination with Lead Centre.

### Change and change management

JMA started to use a new type of radiosonde RS-11G by Meisei in place of RS92-SGP by Vaisala at Tateno on 1 July 2013. The RS92-SGP and RS-11G radiosonde carried out the dual launch experiment in October to November 2013 and January 2014.

The aims of this experiment are for confirming the small difference of each radiosondes value as reported in ICM-6.

The process of creating the “RS-11G GDP” is reported in ICM-7. The technical document of RS-11G (and iMS-100) that include the process of creating the GDP, is under construction on the assumption that submitting a paper.

In addition, the previous routine radiosonde (RS92-SGP) is launched with RS-11G routine radiosonde, in order to evaluate each radiosonde. This dual-launch is carrying 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” is already created, and communication/upload test with the GRUAN Lead Centre were carried out in February 2016, this experiment has been completed and currently checking at Lead Centre.

After this checking, Tateno will be sent a RS-11G GDP to Lead Centre routinely, near future. Furthermore, observations of the RS-11G mounted with MTR and/or CFH are carried out twice in every year for accuracy confirmation from last October.

## **Resourcing**

(NA)

## **Site assessment and certification**

Tateno is currently applying for site certification procedure. Relevant document of the Site certification was sent to GRUAN Lead Centre on this 1<sup>st</sup> April.

## **GRUAN related research**

(NA)

## **WG-GRUAN interface**

(NA)

## **Items for ICM-8 plenary discussions**

Regarding the additional metadata of FM-94 BUFR template (B/C25) required for GRUAN.

This item is to determine the metadata elements required as GRUAN. Metadata elements which determined by the GRUAN are considered by the IPET-DRMM, it will be reflected in the BUFR template (B/C25). JMA will be builds the next sounding system using this BUFR template.

JMA hope to determine an additional metadata in ICM-8, because specifications of this system will be created until the end of 2016.

## **Future plans**

(Meisei GDP)

Tateno create the GDP for Meisei radiosonde and send to "GRUAN Lead Centre", routinely. And this GDP of a regular version will be released from NCDC after the relevant technical document is authorized. Then, Tateno will be possible to accept the data of other site used the RS-11G or iMS-100 radiosonde, and creating a GDP. Then, Tateno will be possible to accept the other site data which used the RS-11G or iMS-100 radiosonde. And create a GDP for those sites.

(GNSS)

The RINEX file for GNSS data will be sent routinely after the communication test to "GRUAN Lead Centre", near future.

(Sounding system)

The JMA's next sounding system is a collective management system contained within a data monitoring, data quality control, data storage and data report to GTS of all Aerological sites. This system will be operated in 2018. Tateno and Japan's five Autosonde sites where equipped with MW31 (RA92 sounding equipment) are planning to improvement for possible to use the RS41 radiosonde at this timing.



# GRUAN Station Report for Tateno (TAT), 2015

Reported time range is Nov 2014 to Feb 2016

Created by the Lead Centre

Version from 2016-04-18

## 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	Masamichi, Nakamura
WMO no./name	47646 TATENO
Operators	current 28, change +5 / -5
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
TAT-GN-01	GNSS	0	0	not scheduled
TAT-RS-01	Sounding Site	5	966	99.28 %

### 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	Masamichi, Nakamura
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	Masamichi, Nakamura
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

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

##### 3.1.2 Dataflow

Dataflow to GRUAN LC running since June 2011. Until June 2013 only data for the Vaisala RS92 have been included.

Dataflow for the Meisei RS-11G started in September 2013.

All soundings are submitted using RsLaunchClient.

##### 3.1.3 Data quality

Only few data processing issues (corrupt files or unknown issues).

One third of all Vaisala measurements passed GRUAN Quality Control routines with a 'checked' label, largely due to uncertainty inconsistencies in pressure and humidity.

GC25 ground check corrections are within expected limits.

An additional ground check is used for Meisei RS-11G radiosondes at several humidity levels.

#### 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		935	935	
RS-11G-BETA	001		46	

##### 3.2.2 Stream: RS92

RS92		73	73	
RS92-RAW	001		73	
RS92-GDP	002		71	48

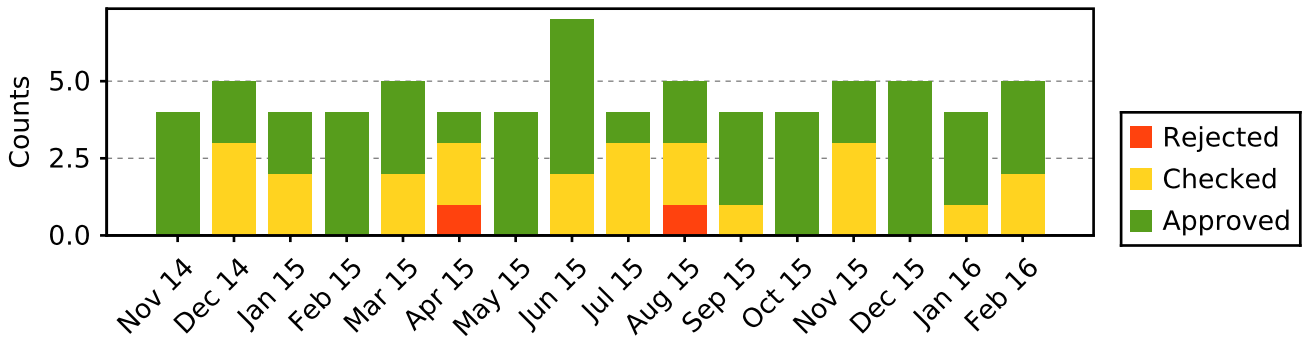
### 3.3 Data quality of current GRUAN data products

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

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

Nov 14	4	4							
Dec 14	5	2	3						3
Jan 15	4	2	2				1		1
Feb 15	4	4							
Mar 15	5	3	2						2
Apr 15	4	1	2	1					3
May 15	4	4							
Jun 15	7	5	2						2
Jul 15	4	1	3					1	2
Aug 15	5	2	2	1			1		1
Sep 15	4	3	1						1
Oct 15	4	4							
Nov 15	5	2	3						3
Dec 15	5	5							
Jan 16	4	3	1						1
Feb 16	5	3	2				1		1
	<b>73</b>	<b>48</b>	<b>23</b>	<b>2</b>			<b>3</b>	<b>1</b>	<b>20</b>

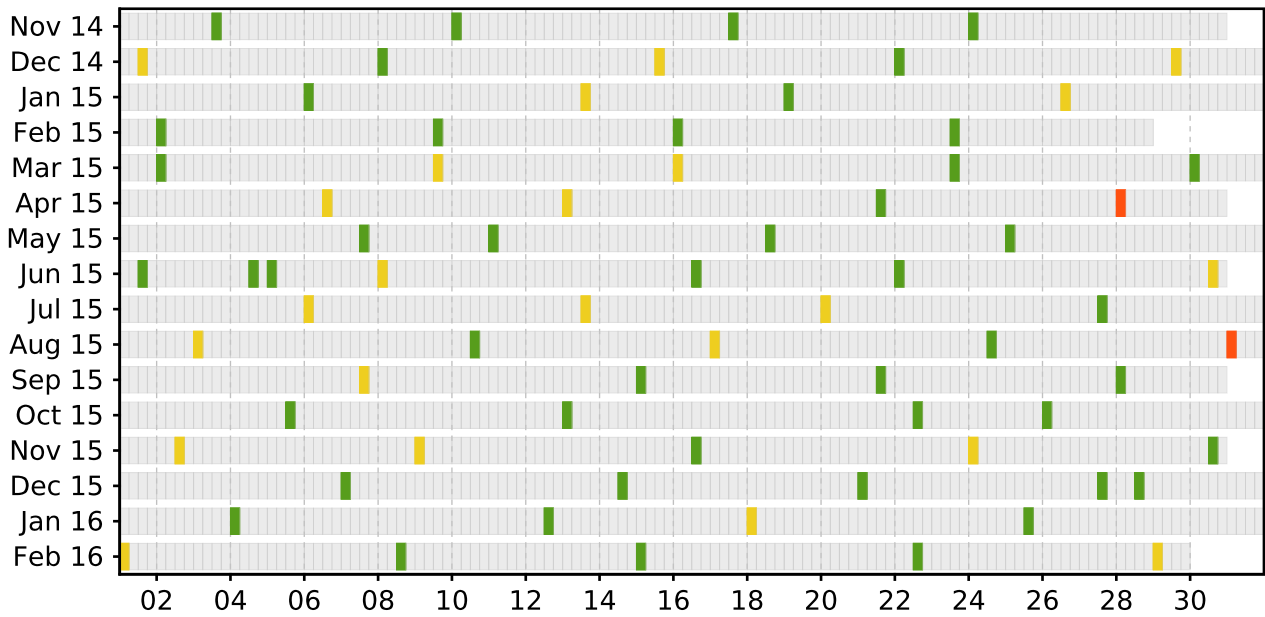
Data quality statistic of stream RS92





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

Schedule data quality of stream RS92



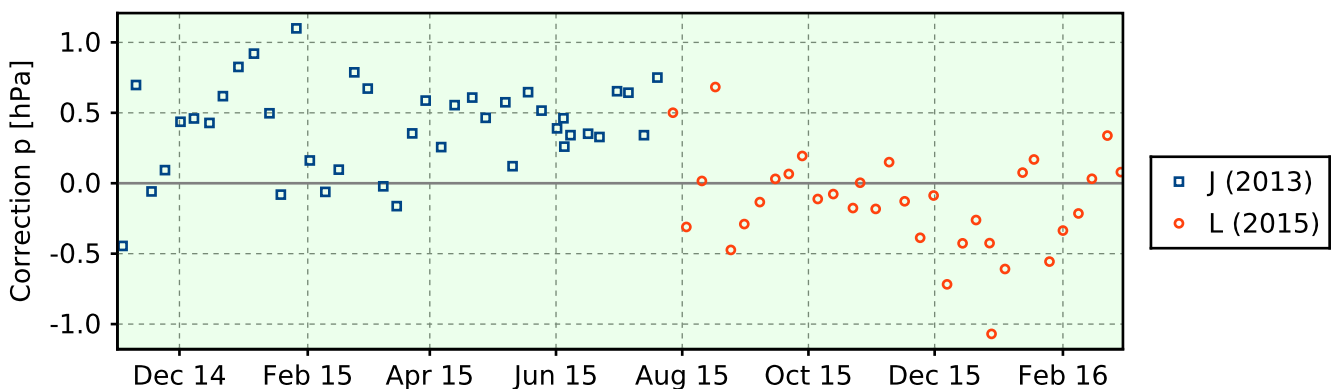
### 3.4 Instrument combinations of TAT-RS-01

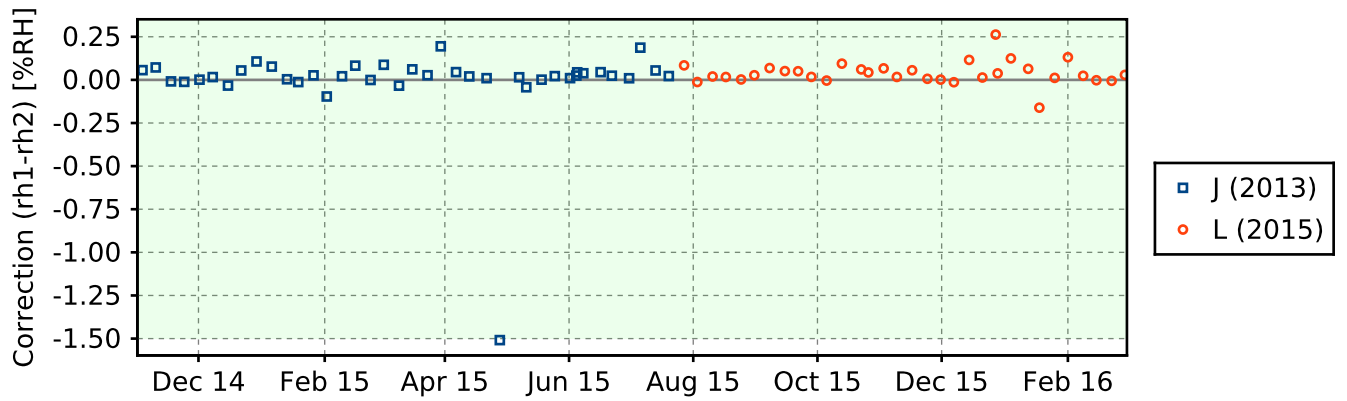
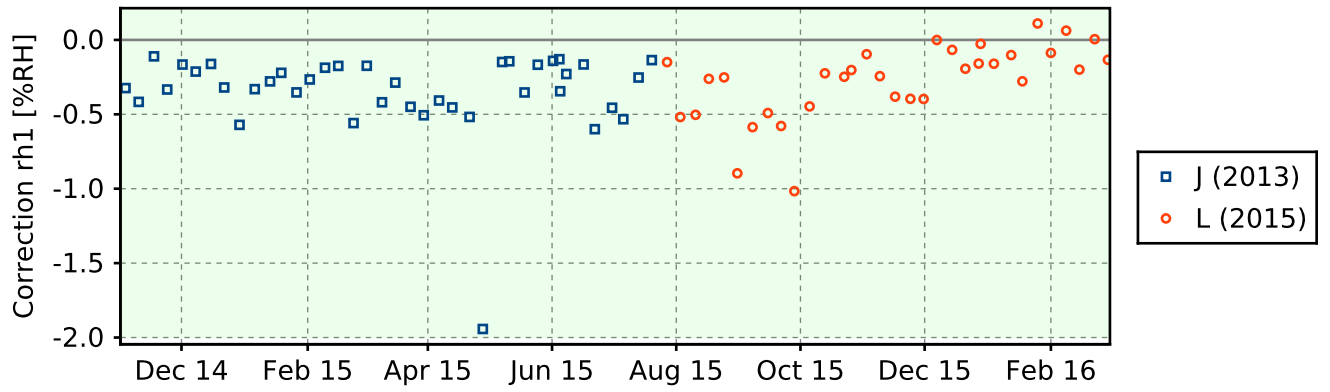
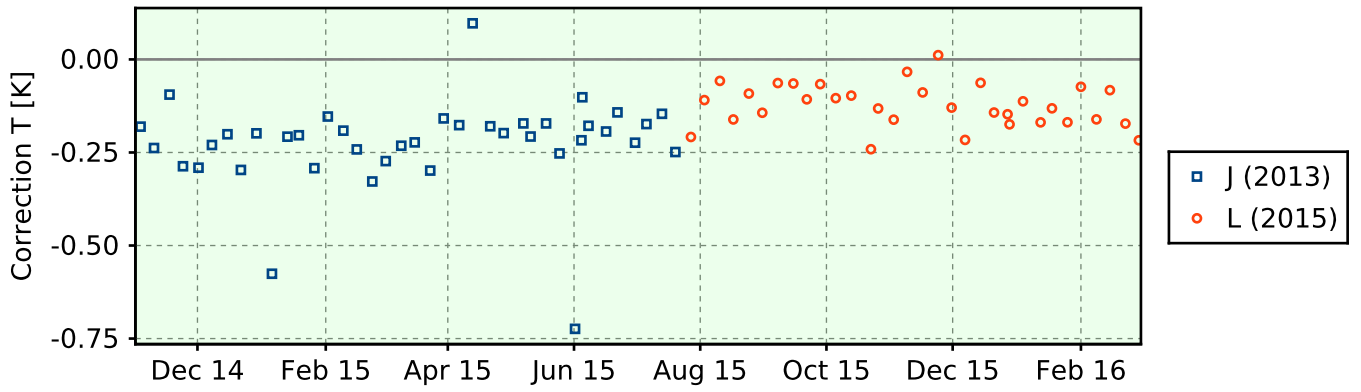
Count	Instrument combination
893	RS-11G
42	RS-11G, RS92
31	RS92

### 3.5 Instrument ground check

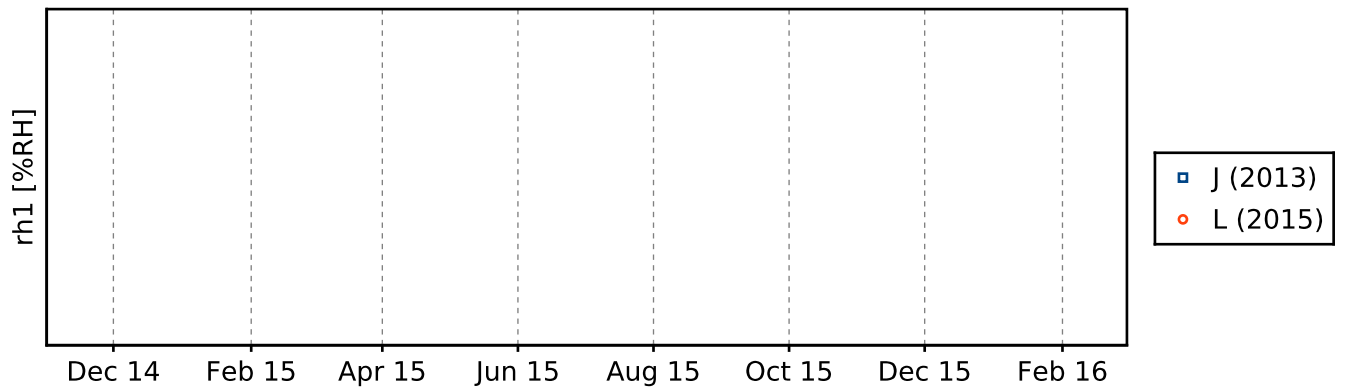
#### 3.5.1 Stream: RS92

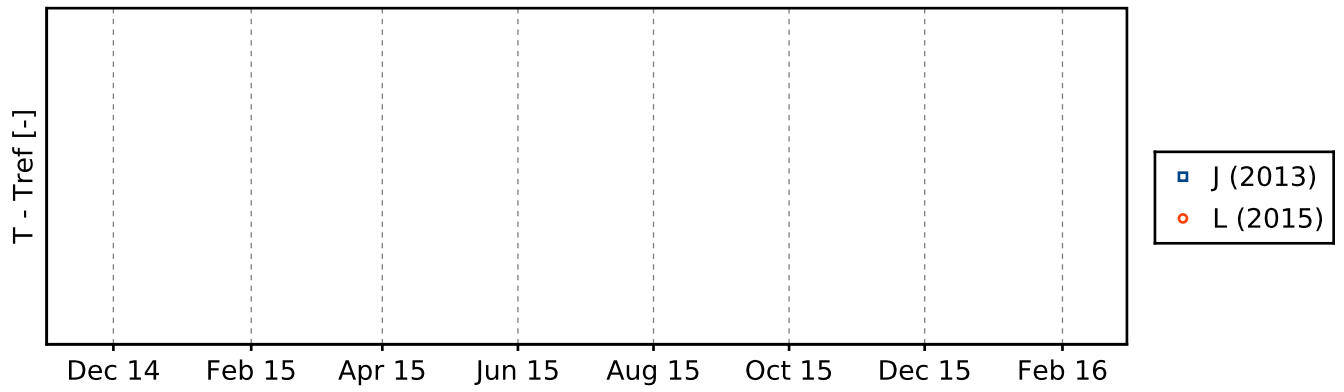
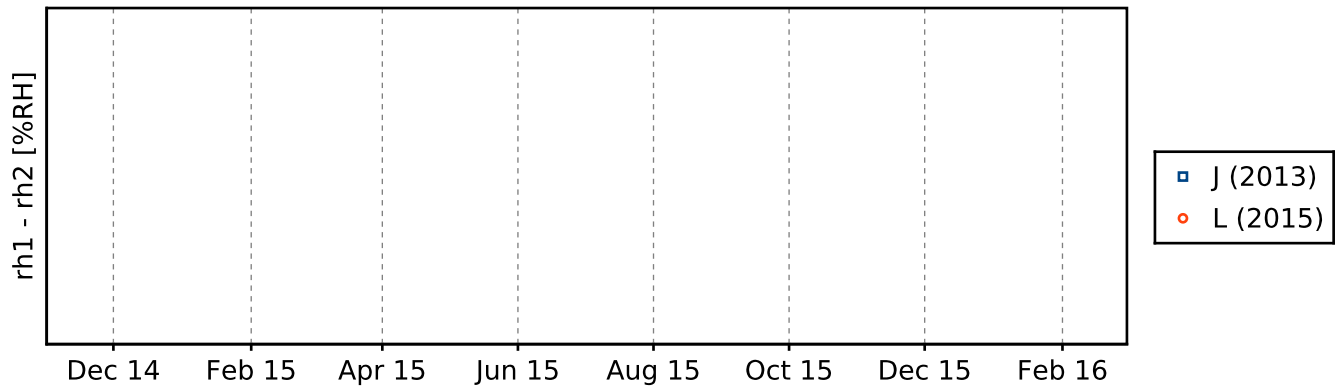
##### 3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC





### 3.6 Measurement events

#### 3.6.1 Stream: RS92

