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GLOBAL CLIMATE OBSERVING
SYSTEM (GCOS)

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**6th GRUAN Implementation-
Coordination Meeting (ICM-6)**

Session 6

Greenbelt, USA

10 March – 14 March 2014

GRUAN Station Report for Tateno

(Submitted by Yoshihiko Tahara)

Summary and Purpose of Document

Report from the GRUAN station Tateno for the period Feb 2013 to Feb 2014.



GRUAN Station Report for Tateno

Reporting for the period Feb 2013 to Feb 2014

Date: 28-Feb-2014

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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 radiosonde, 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.

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 in 1 July 2013. For the ground data processing of the new radiosonde, the new software MGPS2 by Meisei on a new PC and a general-purpose receiver were also implemented. The sounding data of the new radiosonde since its operation are sent to the GRUAN Lead Centre, and operational provision was started 20 September 2013.

To confirm consistency and to analyse difference between the previous and new radiosondes, Tateno conducted dual launch experiment between 21 October and 5 November 2013 and 20 to 31 January 2014, and will perform the experiment in spring and summer 2014. In addition, the previous radiosonde is solo launched once a week at 12 UTC on Monday from July 2013 to June 2014.

Resourcing

To reduce the operational cost, the use of cost effective radiosonde and expendable balloon and other equipment are sought continuously.

Tateno is investigating for the launch of radiosondes carrying Cryogenic Frost Point Hygrometer (CFH) and Meisei Temperature Reference (MTR) in terms of accuracy and cost.

Site assessment and certification

Tateno would like to apply for the GRUAN certification after the establishment of the data processing of the new radiosonde at the GRUAN Lead Centre.

GRUAN related research

(NA)

WG-GRUAN interface

(NA)

Items for ICM-6 plenary discussions

Since the development cycle of radiosonde is getting shorter, new types of radiosonde are expected to be released in market more frequently. To catch up with the cycle, discussion on frequency of the international comparison campaign is necessary.

Future plans

Due to the JMA procurement policy, radiosondes used for a year is determined through a competitive tendering process under the conditions of latest technology, meeting GRUAN requirements and cost effective. As the result of the procurement, radiosonde type might be changed every year.



GRUAN Station Report for Tateno (TAT), 2013

Reported time range is Nov 2012 to Oct 2013

Created by the Lead Centre

Version from 2014-02-20

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	Tahara, Yoshihiko
WMO no./name	47646 TATENO
Operators	current 22, change +2 / -0
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	4	565	54.43 %

1.2 General comments from Lead Centre

1.2.1 General

Good communications between station and GRUAN LC.

It is requested, that dual launches are transmitted as such and that the RsLaunchClient is used to capture all relevant meta-data and raw data of both systems.

It is strongly recommended that the site uses a manufacturer independent ground check for the new Meisei radiosonde to assure traceability to a standard.

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

1.2.2 GTS

This site regularly sends PTU measurements in the GTS (FM35 in BUFR format, 2 times per day).

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

Info	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	Tahara, Yoshihiko
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	Tahara, Yoshihiko
Started at	-
Defined setups	4 (ROUTINE2, DUAL, ROUTINE, COMPARE)
Possible streams	RS11, RS92

3.1 Lead Centre comments

3.1.1 Change management

On 1 July 2013 the operational sonde was changed from Vaisala RS92-SGP to Meisei RS-11G.

GRUAN LC was informed about this change, which made it possible to prepare the necessary definitions in the GRUAN metadata database (GMDB) prior to the change event.

Dual launches of RS92-SGP and RS-11G are being conducted, but are currently not transmitted 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 launches are transmitted using RsLaunchClient.

3.1.3 Data quality

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

One third of all Vaisala measurements pass 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 like SHC (Standard Humidity Chamber) is not used (or not recorded in meta-data).

3.1.4 Data streams

Data stream 'RS92' includes all measurements which were performed with any type of Vaisala RS92 radiosonde, like RS92-D, RS92-K, RS92-FN, RS92-AM, RS92-SGP, ...

Data stream 'RS11' includes all measurements which were performed with any type of Meisei RS-11 radiosonde, like RS-11G.

3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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3.2.1 Stream: RS11

RS11		64	64	
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3.2.2 Stream: RS92

RS92		501	501	
RS92-RAW	001		494	
RS92-GDP	001		487	
RS92-GDP	002		488	349

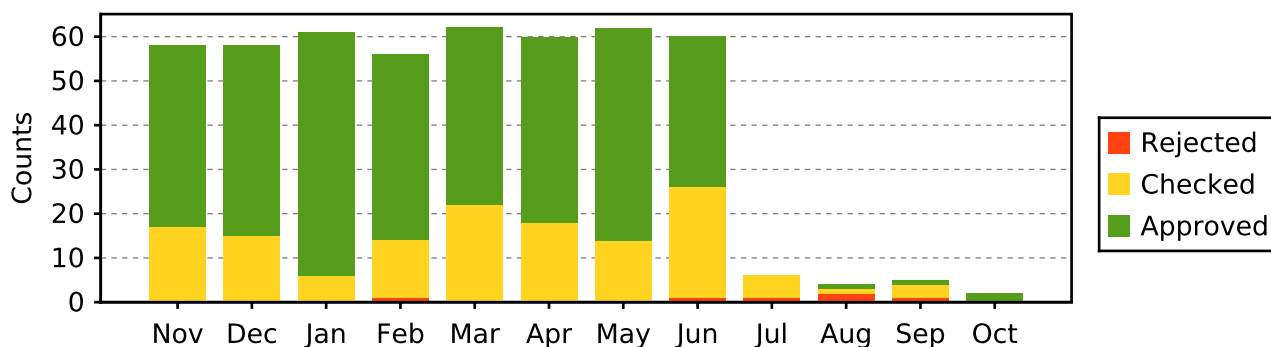
3.3 Data quality of current GRUAN data products

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

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

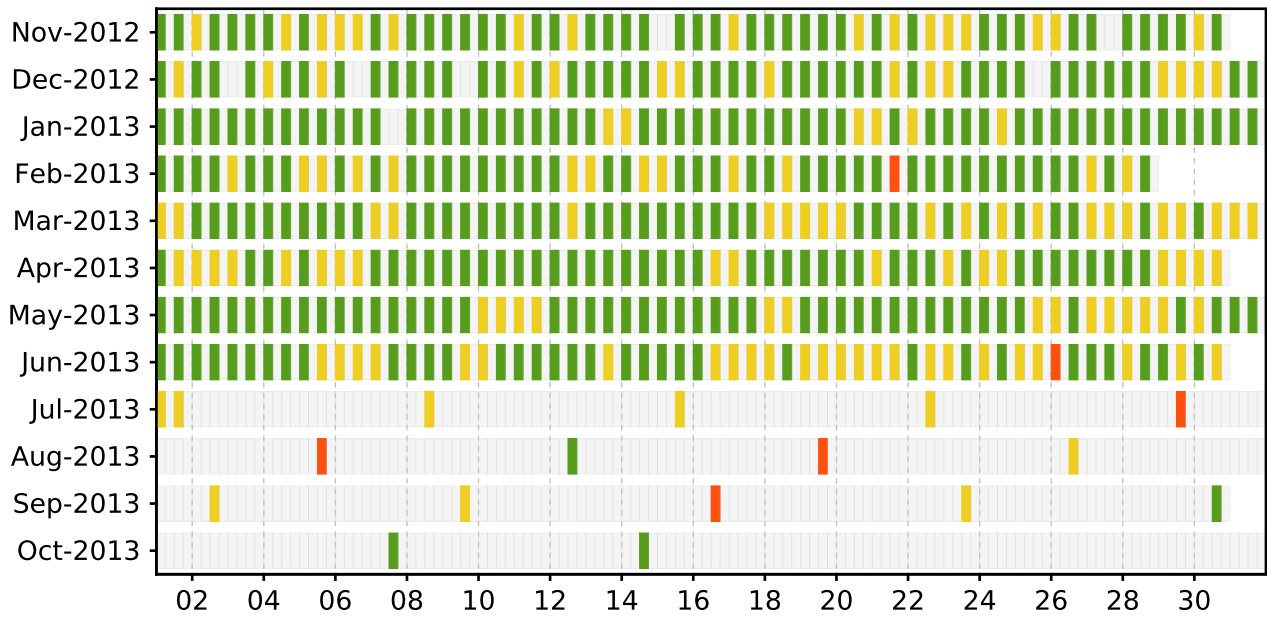
Nov 12	58	41	17				2		17
Dec 12	58	43	15				6		10
Jan 13	61	55	6				1		5
Feb 13	56	42	13	1			1		13
Mar 13	62	40	22				2		20
Apr 13	60	42	18						18
May 13	62	48	14						14
Jun 13	60	34	25	1			10		18
Jul 13	6		5	1			6		3
Aug 13	4	1	1	2			2		
Sep 13	5	1	3	1			4		
Oct 13	2	2							
	494	349	139	6			34		118

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



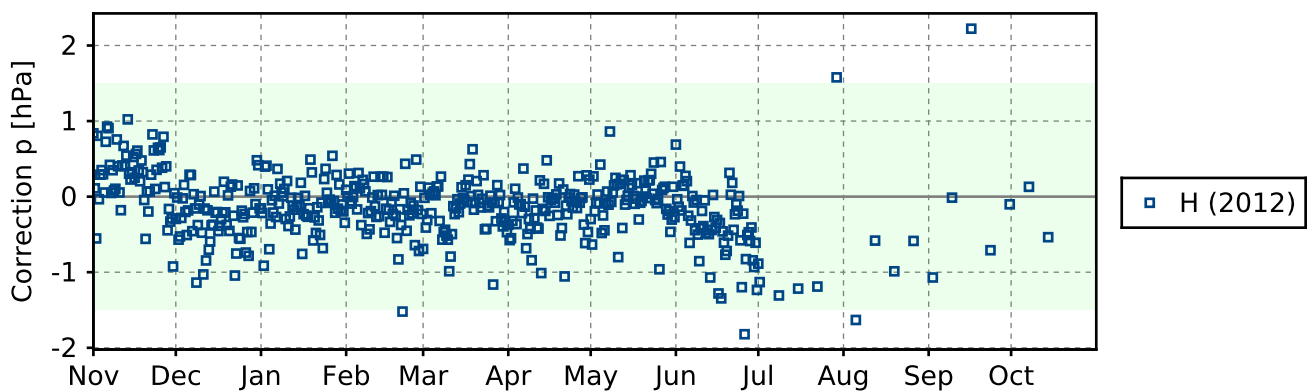
3.4 Instrument combinations of TAT-RS-01

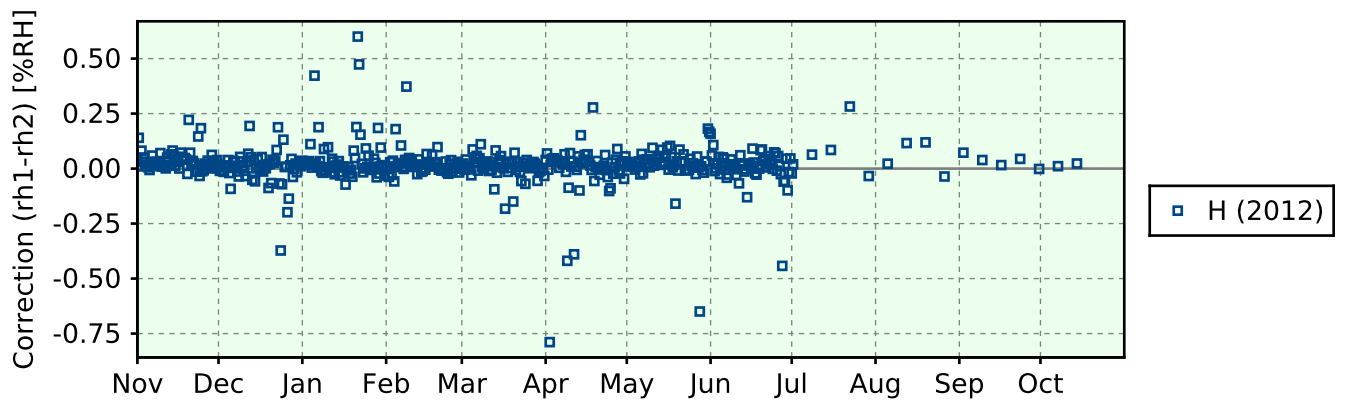
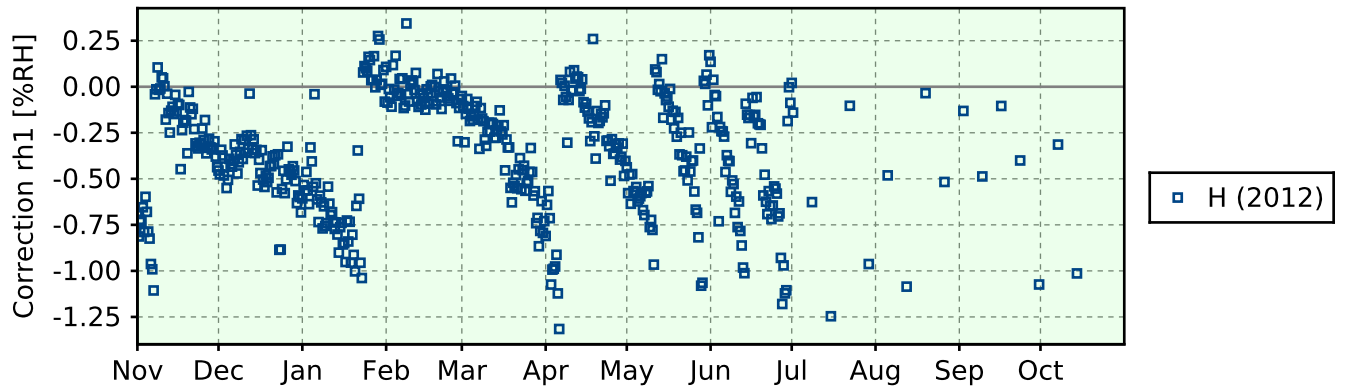
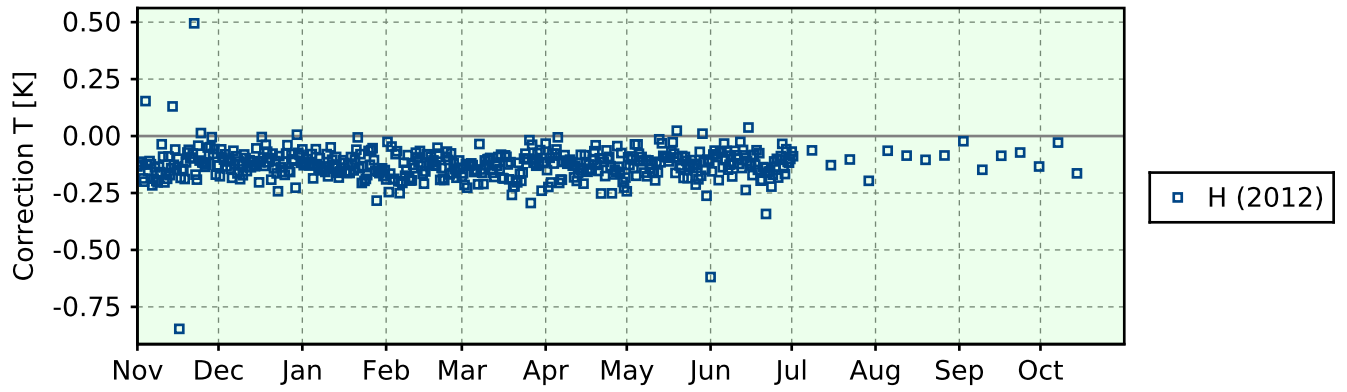
Count	Instrument combination
64	RS11
501	RS92

3.5 Instrument ground check

3.5.1 Stream: RS92

3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC

