



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

---

Doc. 8.04  
(20.II.2015)

---

**7th GRUAN Implementation-  
Coordination Meeting (ICM-7)**  
Matera, Italy  
23 February – 27 February 2015

Session 8

## GRUAN Station Report for Cabauw

*(Submitted by Arnoud Apituley)*

---

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

Report from the GRUAN station Cabauw for the period Mar 2014 to Jan 2015.

---





## GRUAN Station Report for Cabauw/De Bilt

Reporting for the period Mar 2014 to Jan 2015

Date: 20 Feb. 2015

Primary author: Arnoud Apituley (email: apituley@knmi.nl)

### **Overview**

Data from all radiosondes launched from De Bilt (00 UTC nominal) are submitted to the GRUAN lead centre. Any additional sondes are launched using the same procedures and are also uploaded. Step by step the preparations for the adoption of the RSLaunchClient are taken, including the procedures for using the standard humidity chamber. The weekly ozone sonde data are also submitted to the lead centre.

Routine observations from GNSS, microwave radiometer and other future GRUAN data streams are recorded and stored.

### **Change and change management**

No changes (since 2014)

### **Resourcing**

Radio sonde launches (00 UTC) and weekly ozone sonde launches will continue.

### **Site assessment and certification**

An application for certification has been submitted.

### **GRUAN related research**

Working on

- Raman lidar water vapour profile
- Pure rotational Raman lidar for temperature profiling
- Tasks related to TTAM
- Tasks related to metadata (WIGOS)

### **WG-GRUAN interface**

### **Items for ICM-7 plenary discussions**

### **Future plans**

- Implement RSLaunchClient
- Certification





# GRUAN Station Report for Cabauw (CAB), 2014

Reported time range is Nov 2013 to Oct 2014

Created by the Lead Centre

Version from 2015-02-11

## 1 General GRUAN station information

Info	Value
Station name	Cabauw
Unique GRUAN ID	CAB
Geographical position	51.9700 °N, 4.9200 °E, 1.0 m
Operated by	KNMI   Koninklijk Nederlands Meteorologisch Instituut
Main contact	Apituley, Arnoud
WMO no./name	-
Operators	current 0, change +0 / -0
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
CAB-GN-01	GNSS	0	0	not scheduled
CAB-RS-01	Sounding Site	2	421	100.72 %

### 1.2 General comments from Lead Centre

#### 1.2.1 General

It is strongly recommended that the site uses the RsLaunchClient to submit data to the Lead Centre.

The site uses a Standard Humidity Chamber during launch preparation of the ECC ozone soundings, but these data are not submitted to the Lead Centre. Using the RsLaunchClient will allow proper submission of these data. It is recommended to use the SHC during the preparation of the operational soundings as well.

The site is requested to submit ECC ozone soundings with complete metadata matching an ECC ozone sonde and not to submit it as routine radiosounding.

#### 1.2.2 GTS

This site regularly sends PTU measurements in the GTS (BUFR format, 2s resolution, once per day).

---

## 2 System: GNSS Site CABW (CAB-GN-01)

<b>Info</b>	<b>Value</b>
System name	GNSS Site CABW
Unique GRUAN ID	CAB-GN-01
System type	GNSS (GN - GNSS)
Geographical position	51.9690 °N, 4.9260 °E, 2.4 m
Operated by	KNMI   Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
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 (De Bilt) (CAB-RS-01)

Info	Value
System name	Radiosonde Launch Site (De Bilt)
Unique GRUAN ID	CAB-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	52.1000 °N, 5.1800 °E, 1.0 m
Operated by	KNMI   Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
Started at	-
Defined setups	2 (ROUTINE, OZONE)
Possible streams	RS92

#### 3.1 Lead Centre comments

##### 3.1.1 Dataflow

Data from De Bilt to the GRUAN LC are flowing fully automated since January 2011. The launch metadata are not manually checked and the operator-influence of launches are not recorded. Equipment changes (e.g. balloon, unwinder, ...) are not recorded.

As a consequence it is essential that the Lead Centre is notified of all upcoming changes to be able to maintain a correct metadata record.

##### 3.1.2 Data quality

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

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

An additional ground check SHC (Standard Humidity Chamber) is used for all ECC launches. However, the RsLaunchClient is not used and SHC ground check data are not transmitted to the Lead Centre.

Weekly ECC launches are incorrectly recorded as Vaisala RS92 routine soundings without ECC sonde.

Additional ground check in SHC is not performed for the operational soundings.

#### 3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
---------	---------	--------------------	-----------------	---------------------

##### 3.2.1 Stream: RS92

RS92		421	421	
RS92-RAW	001		421	
RS92-GDP	001		92	
RS92-GDP	002		391	244

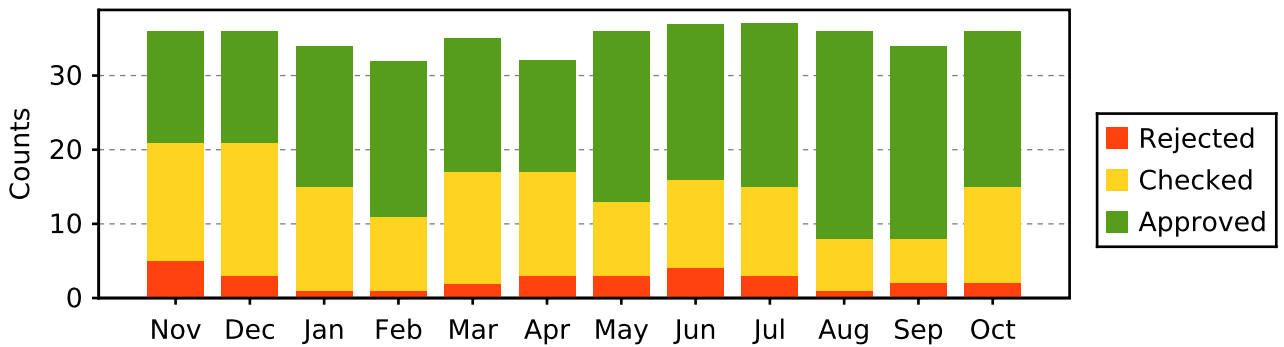
#### 3.3 Data quality of current GRUAN data products

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

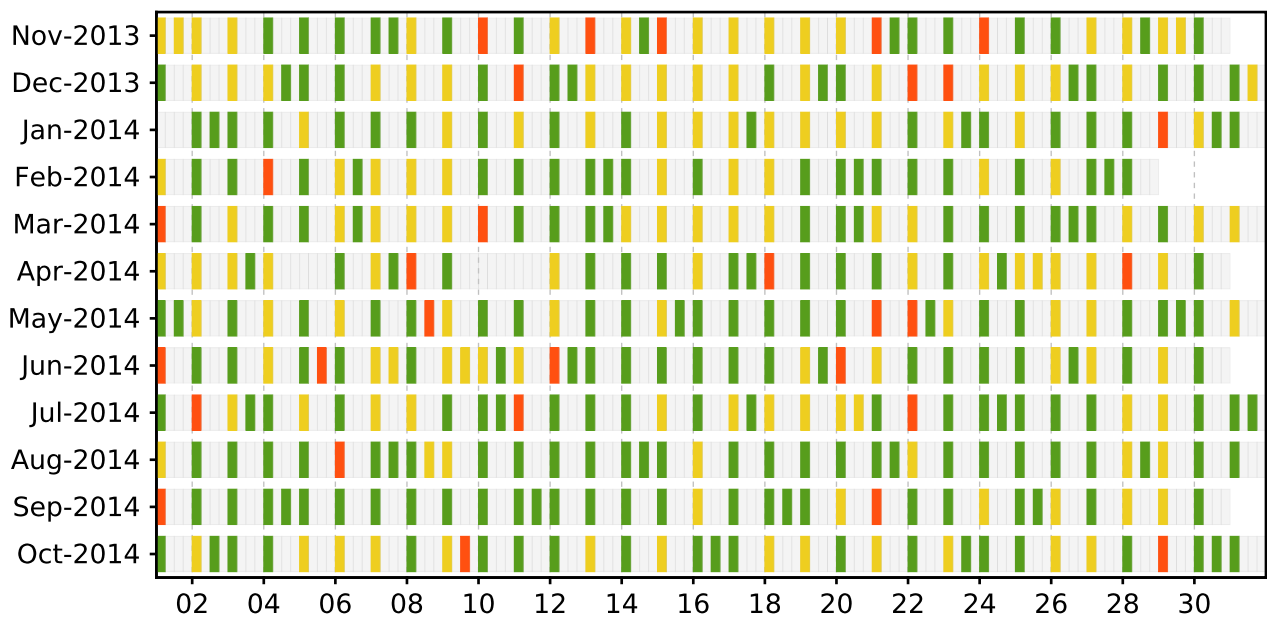
3.3.1 Stream: RS92 (Product: RS92-GDP-002)

Nov 13	36	15	16	5					18
Dec 13	36	15	18	3			1		19
Jan 14	34	19	14	1					14
Feb 14	32	21	10	1					11
Mar 14	35	18	15	2					15
Apr 14	32	15	14	3			1		14
May 14	36	23	10	3			1		11
Jun 14	37	21	12	4					12
Jul 14	37	22	12	3			1		13
Aug 14	36	28	7	1			1		7
Sep 14	34	26	6	2			2		7
Oct 14	36	21	13	2			3		13
	<b>421</b>	<b>244</b>	<b>147</b>	<b>30</b>			<b>10</b>		<b>154</b>

Data quality statistic of stream RS92



Schedule data quality of stream RS92



3.4 Instrument combinations of CAB-RS-01

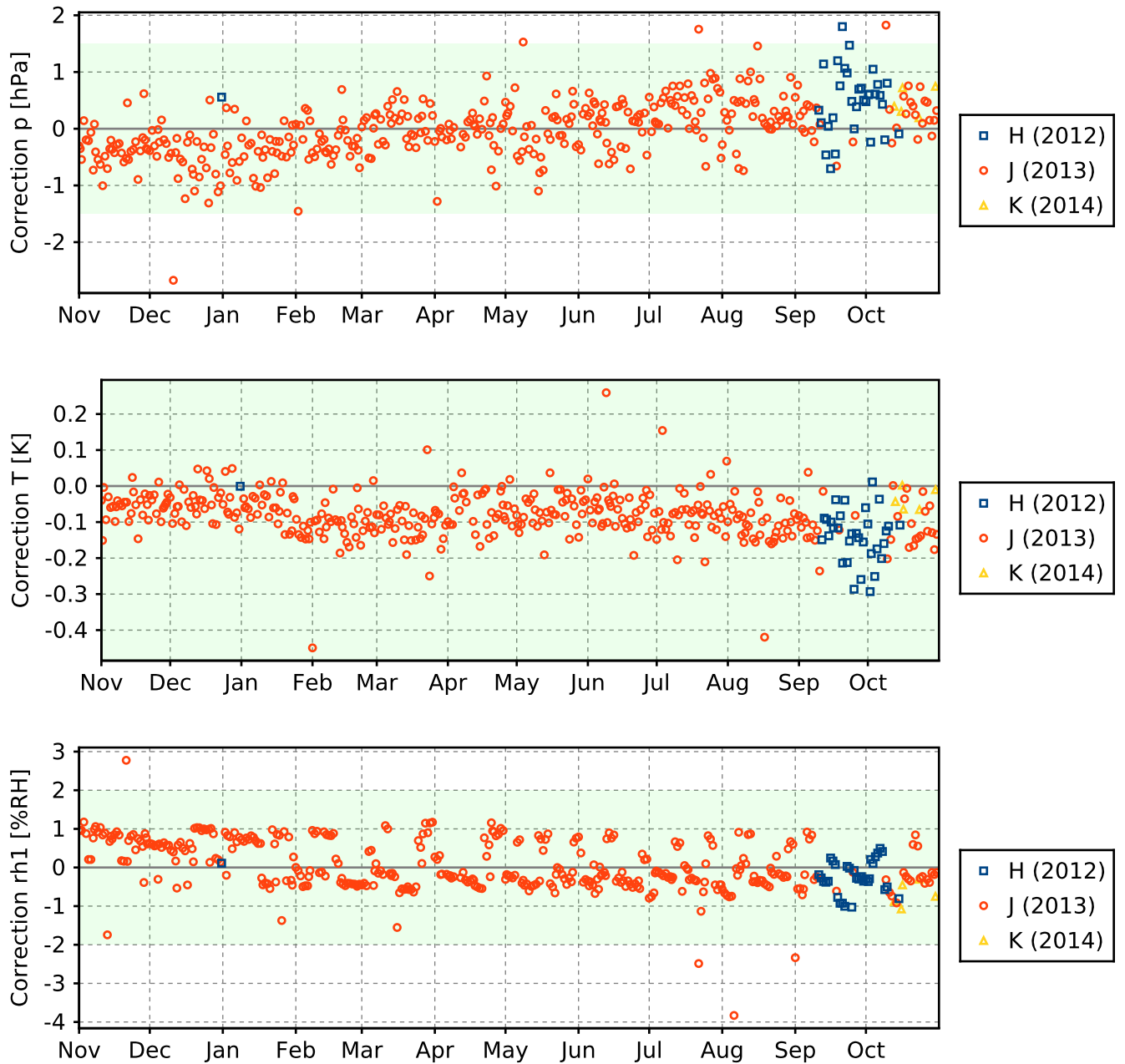


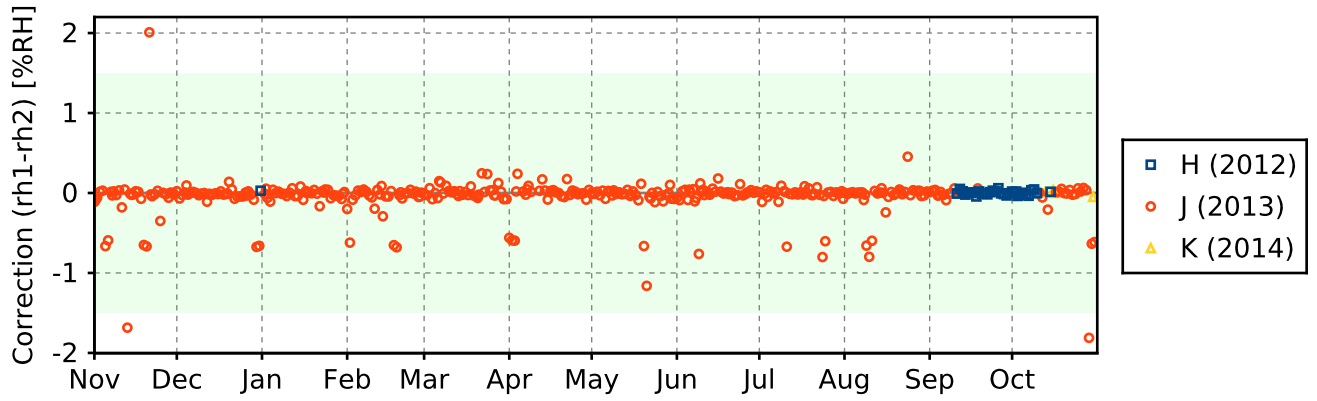
Count	Instrument combination
421	RS92

### 3.5 Instrument ground check

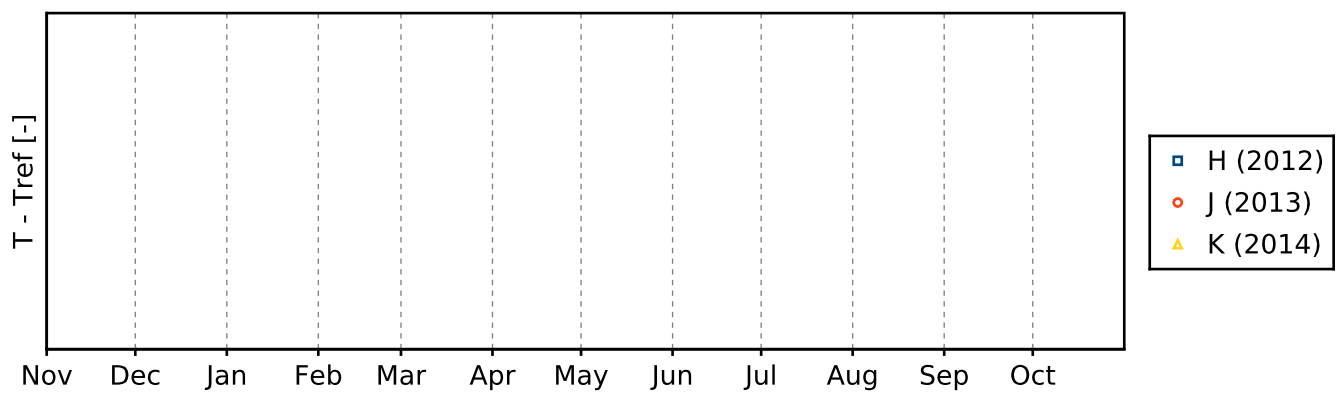
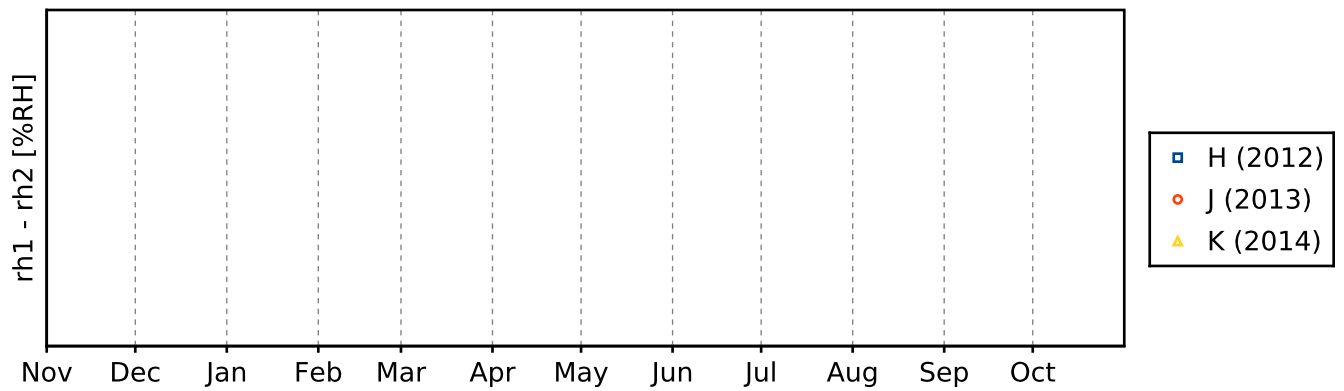
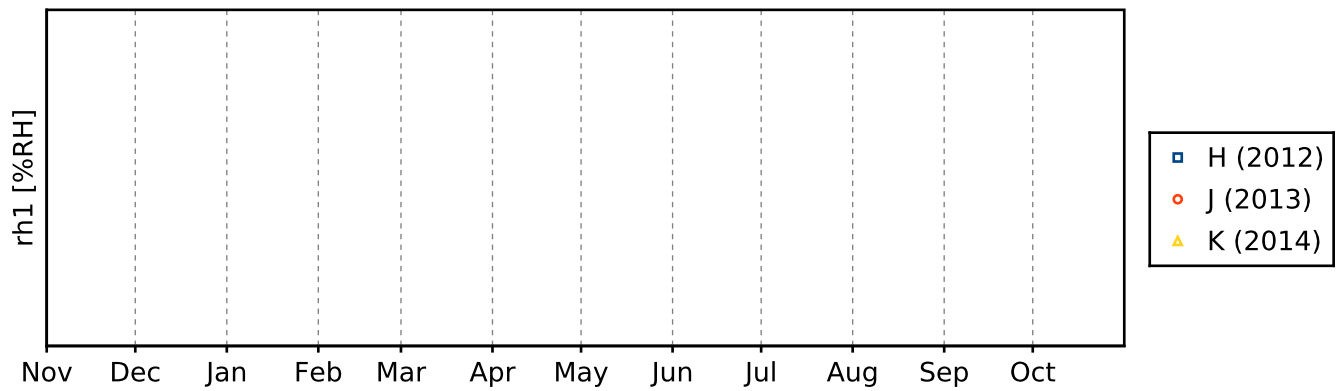
#### 3.5.1 Stream: RS92

##### 3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC



3.6 Measurement events

3.6.1 Stream: RS92

