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

15th GRUAN Implementation-Coordination Meeting (ICM-15)
Bern
11 March - 15 March 2024

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Session 5

GRUAN Site Report for Cabauw

(Submitted by Lead Centre)

Summary and Purpose of this Document

Report from the GRUAN site Cabauw for the period January 2022 to December 2023.

GRUAN Site Report for Cabauw (CAB), 2022

Reported time range is Jan 2022 to Dec 2022
Created by the Lead Centre
Version from 2024-03-01

1 General GRUAN site information

Object	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	06260 DE BILT AWS
Operators	currently 0, changes +0 / -0
Sounding Site	1
Lidar	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
CAB-GN-01	GNSS Site CBW1	GNSS	1	operational
CAB-LI-01	Cabauw Raman Water Vapor Lidar (CAELI)	Lidar	1	0
CAB-RS-01	Radiosonde Launch Site (De Bilt)	Sounding Site	4	211

1.2 General comments from Lead Centre

1.2.1 General

Operational data flow of RS41 soundings was restarted in November 2022. Therefore, this site is no longer considered a silent site.

1.2.2 Request

A transmission of RS41 radiosonde data of missing years (November 2018 to October 2022) is requested.

2 System: GNSS Site CBW1 (CAB-GN-01)

Object	Value
System name	GNSS Site CBW1
Unique GRUAN ID	CAB-GN-01
System type	GNSS (GN - GNSS)
Geographical position	51.5810 °N, 4.5534 °E, 46.0 m
Operated by	KNMI | Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
Started at	2019-05-16
Defined setups	1 (HOURLY)
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

No GNSS dataflow to LC has been established yet.

3 System: Cabauw Raman Water Vapor Lidar (CAELI) (CAB-LI-01)

Object	Value
System name	Cabauw Raman Water Vapor Lidar (CAELI)
Unique GRUAN ID	CAB-LI-01
System type	Lidar (LI - Lidar)
Geographical position	51.9700 °N, 4.9100 °E, 0.0 m
Operated by	KNMI | Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
Started at	2014-07-01
Defined setups	1 (DEFAULT)
Possible streams	LIDAR

3.1 Lead Centre comments

3.1.1 Dataflow

No lidar dataflow to LC has been established yet.

4 System: Radiosonde Launch Site (De Bilt) (CAB-RS-01)

Object	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	4 (ROUTINE, OZONE, ROUTINE2, OZONE2)
Possible streams	RS41, RS92

4.1 Lead Centre comments

4.1.1 Dataflow

The current operational radiosonde is the Vaisala RS41.

Operational data flow of RS41 soundings was restarted in November 2022. A transmission of data of missing years (November 2018 to October 2022) is requested.

4.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI

4.2.1 Stream: RS41

RS41		211	211	
RS41-RAW	001		210	
RS41-EDT	001		207	
RS41-GDP	001		204	

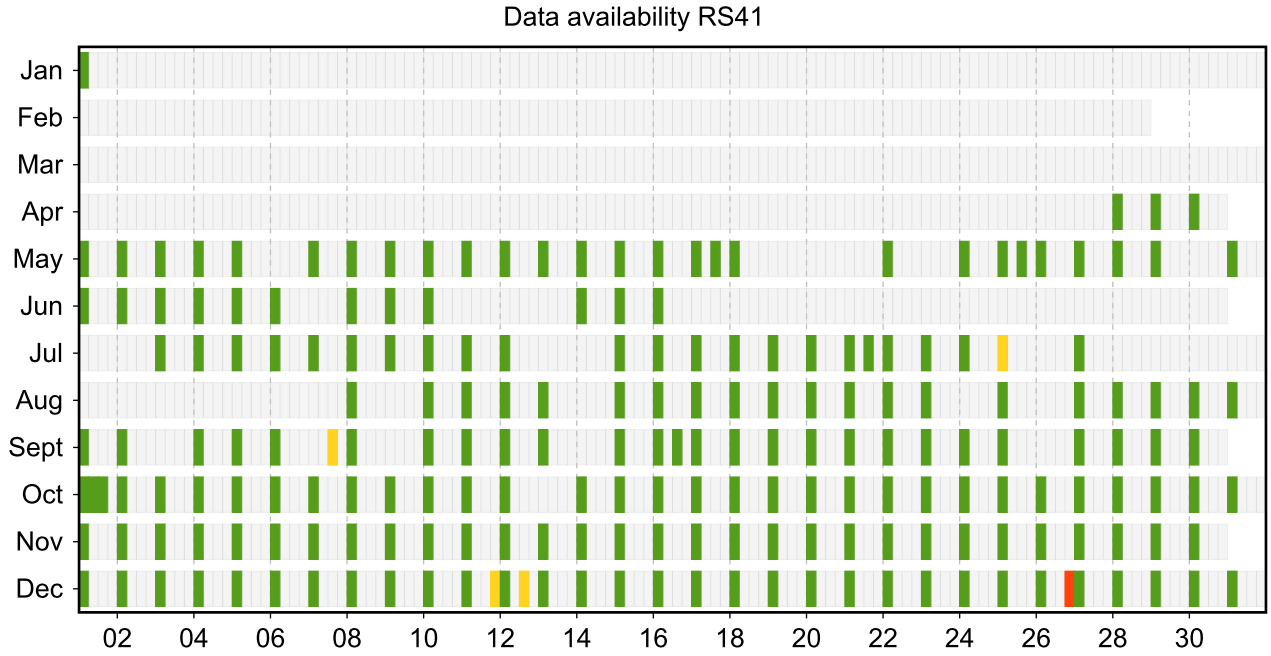
4.3 Availability of data products

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: RS41



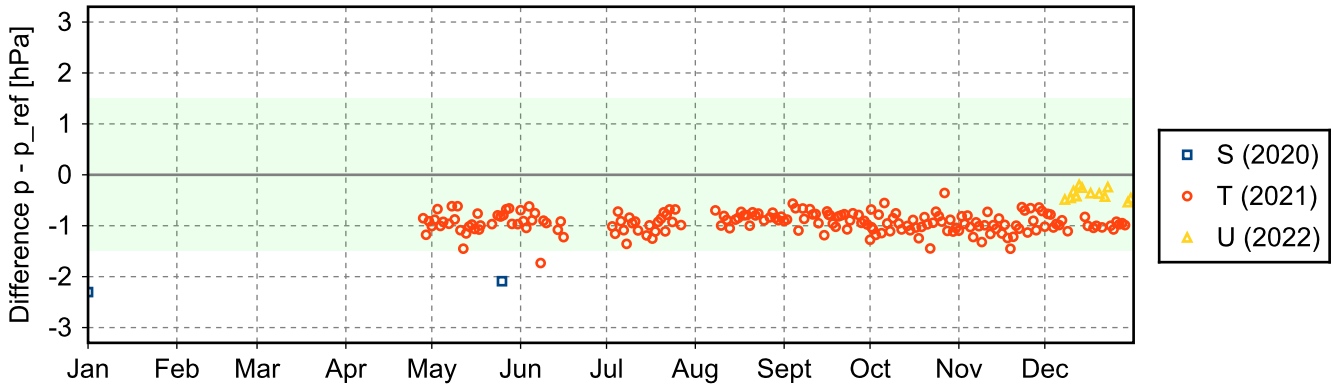
4.4 Instrument combinations of CAB-RS-01

Count	Instrument combination
211	RS41

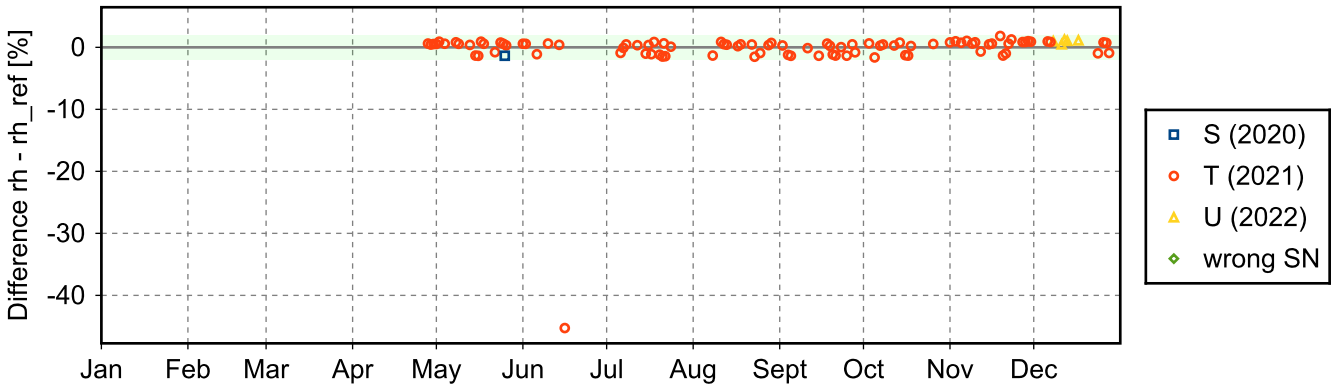
4.5 Instrument ground check

4.5.1 Stream: RS41

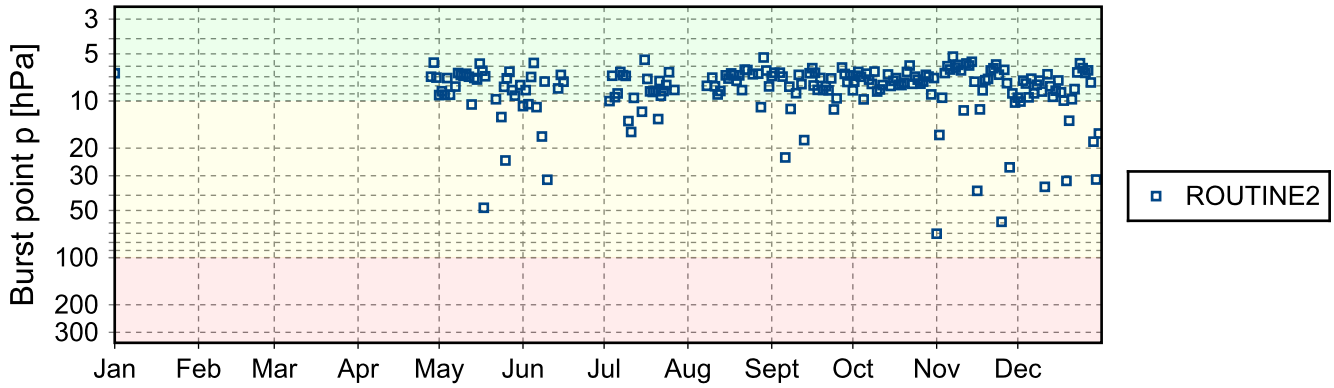
(1) GroundCheck: GC-RI41



(2) GroundCheck: GC-SHC



4.6 Measurement events



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CAB-LI-01	Cabauw Raman Water Vapor Lidar (CAELI)	Lidar	1	0
CAB-RS-01	Radiosonde Launch Site (De Bilt)	Sounding Site	4	342

1.2 General comments from Lead Centre

1.2.1 General

Operational data flow of RS41 soundings was restarted in November 2022. Therefore, this site is no longer considered a silent site.

1.2.2 Request

A transmission of RS41 radiosonde data of missing years (November 2018 to October 2022) is requested.

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Instrument contact	Apituley, Arnoud
Started at	2019-05-16
Defined setups	1 (HOURLY)
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

No GNSS dataflow to LC has been established yet.

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Started at	2014-07-01
Defined setups	1 (DEFAULT)
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3.1 Lead Centre comments

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4.1 Lead Centre comments

4.1.1 Dataflow

The current operational radiosonde is the Vaisala RS41.

Operational data flow of RS41 soundings was restarted in November 2022. A transmission of data of missing years (November 2018 to October 2022) is requested.

The operational data flow of RS41 soundings was stopped again in August 2023.

4.1.2 Data quality

A drift in RS41 ground check of p-sensor (U-batch) is observed. Such drifts could be related to drifts in the reference pressure sensor.

4.1.3 General

There is very good performance in terms of burst altitude which is 10 hPa and higher.

4.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
4.2.1 Stream: RS41				
RS41		342	342	
RS41-RAW	001		342	
RS41-EDT	001		339	
RS41-GDP	001		335	

4.3 Availability of data products

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4.5.1 Stream: RS41

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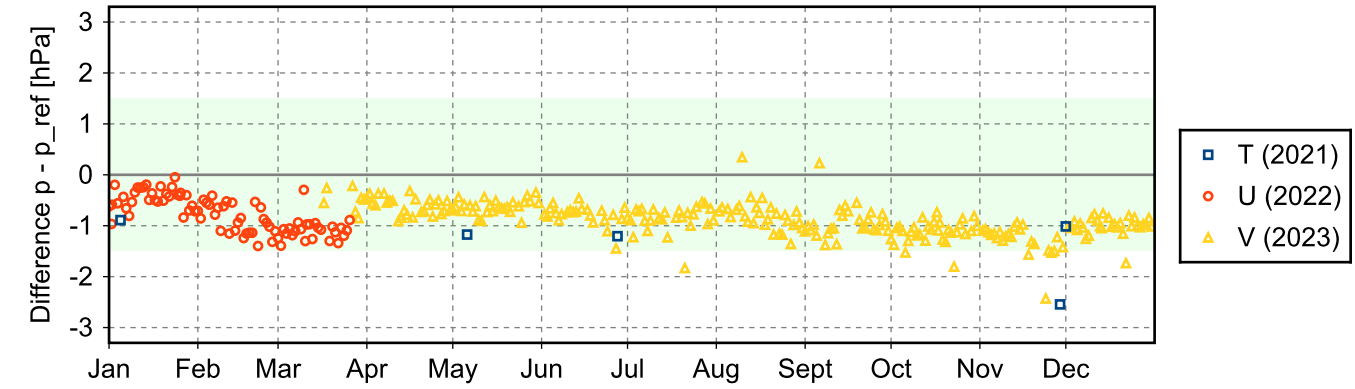
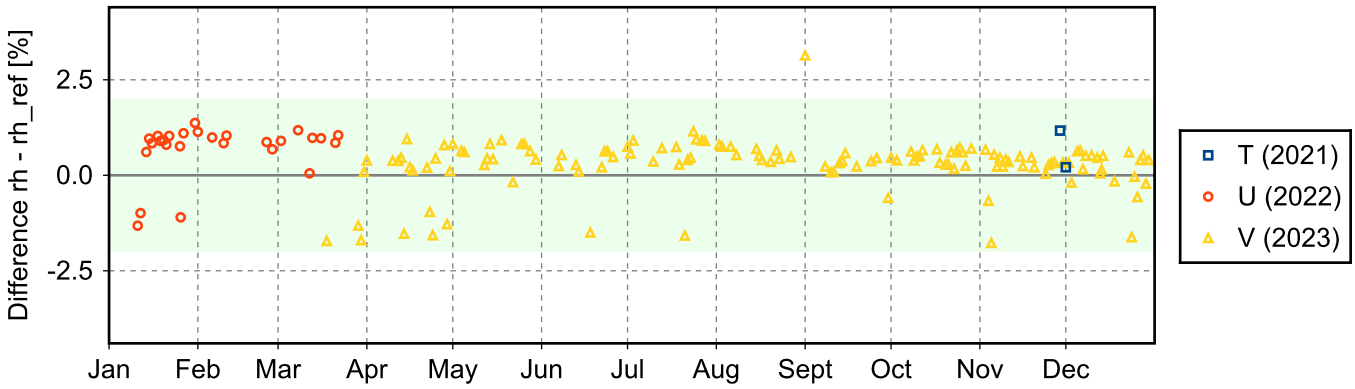


(2) GroundCheck: GC-SHC



4.6 Measurement events