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

14th GRUAN Implementation-Coordination Meeting (ICM-14)
La Réunion
28 November - 2 December 2022

Doc. 5.29
(3.XI.2022)

Session 5

GRUAN Site Report for Trappes-Palaiseau

(Submitted by Jean-Charles Dupont)

Summary and Purpose of this Document

Report from the GRUAN site Trappes-Palaiseau for the period January to December 2021.

Overview

TRappesPalaiseau (TRP) site sends every day the raw data and level 1 product for the M10 radiosondes launched with automatic radiosonde system. Meteomodem M10 certification is a work in progress for TRP and REU sites. GRUAN Data Product Beta is sent to the GRUAND data center since the end of September 2020 after a processing in the French AERIS data center

Change and change management

There is no change in 2021, except some improvements for the M10 GDP product.

Resourcing

In 2021, there is no change in resources.

Operations

In 2021, we do not have problem to reach the burst point at 10 hPa. We do have operational difficulties. We should be able to follow the GRUAN operating procedure for a long term period: ground checks is currently done with SHC-100 chamber and inside ambient shelter with reference T/RH sensors.

Covid-19

In 2021, we have some problems with the COVID-19 to have an operational Robotsonde to repair for example the hydrogene generator.

Site assessment and certification

We have submitted the different certification documents since September 2019 and we would like to have certified sites for TrappesPalaiseau (TRP) and La Reunion (REU) at the beginning of 2023. We improve the quality of the document and we hope it will be OK in some months.

GRUAN-related research

- We have collaborations with ACTRIS network and more precisely with the lidar community to provide input parameters such as vertical profile of temperature, humidity and pressure, used to derived geophysical atmospheric parameters from IPRAL backscatter signal.

- We have collaboration with EProfile network and more precisely with Automatic Lidar and Ceilometer (ALC) community to better monitor and understand the variability of the boundary layer height. Vertical profiles of temperature and wind intensity are here used to compare and evaluate some algorithms, CABAM and STRATFINDER , Kotthaus, S and CSB Grimmond, Q J R Met Soc, 2018), based on ALC vertical profile.
- We have collaboration with ACTRIS-cloud network to study the fog life cycle processes and try to better understand the formation and the dissipation period. Temperature and humidity vertical variability above the fog layer has a significant impact of the fog development intensity and so a better characterization can help us to better forecast the life cycle of the fog layer.

WG-GRUAN interface

Have certified sites with M10 sensor at TrappesPalaiseau (TRP) and La Reunion (REU) in 2023.

Other archiving centers

SIRTA observatory submit data in several international networks:

- BSRN for radiation,
- AERONET for the sun-photometer,
- ACTRIS for research lidar (IPRAL), cloud radar and microwave radiometer,
- EPROFILE for automatic lidar (ALC) and UHF radar,
- RGP-IGN for the GNSS sensor,

Participation in campaigns

Future plans

Certification of M10 radiosonde and for the sites TRappesPalaiseau (TRP) and La Reunion (REU) sites.

GRUAN Site Report for TrappesPalaiseau (TRP), 2021

Reported time range is Jan 2021 to Dec 2021
Created by the Lead Centre
Version from 2022-11-15

1 General GRUAN site information

Object	Value
Station name	TrappesPalaiseau
Unique GRUAN ID	TRP
Geographical position	48.7730 °N, 2.0080 °E, 168.0 m
Operated by	COOP-MF-IPSL | Cooperation between Meteo-France and IPSL
Main contact	Dupont, Jean-Charles
WMO no./name	07145 TRAPPES
Operators	currently 3, changes +0 / -0
Sounding Site	1
Lidar	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
TRP-GN-01	GNSS site at SIRTA	GNSS	0	not operational
TRP-LI-01	IRPAL Multi-Wavelength Lidar for Aerosol, Cloud and Water Vapour Profiling	Lidar	0	0
TRP-RS-01	Trappes radiosonde launch site	Sounding Site	1	629

1.2 General comments from Lead Centre

1.2.1 General

The GRUAN site TrappesPalaiseau is a distributed site with two places Trappes and Palaiseau.

2 System: GNSS site at SIRTA (TRP-GN-01)

Object	Value
System name	GNSS site at SIRTA
Unique GRUAN ID	TRP-GN-01
System type	GNSS (GN - GNSS)
Geographical position	48.7130 °N, 2.2080 °E, 156.0 m
Operated by	SIRTA | Site Instrumental de Recherche par Télédétection Atmosphériques, part of: IPSL | Institut Pierre-Simon Laplace
Instrument contact	Dupont, Jean-Charles
Started at	2008-01-01
Defined setups	-
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

No GNSS dataflow to LC has been established yet.

3 System: IRPAL Multi-Wavelength Lidar for Aerosol, Cloud and Water Vapour

Object	Value
System name	IRPAL Multi-Wavelength Lidar for Aerosol, Cloud and Water Vapour Profiling
Unique GRUAN ID	TRP-LI-01
System type	Lidar (LI - Lidar)
Geographical position	48.7130 °N, 2.2080 °E, 156.0 m
Operated by	SIRTA | Site Instrumental de Recherche par Télédétection Atmosphériques, part of: IPSL | Institut Pierre-Simon Laplace
Instrument contact	Haeffelin, Martial
Started at	2015-06-01
Defined setups	-
Possible streams	-

3.1 Lead Centre comments

3.1.1 Dataflow

No dataflow of lidar measurements to LC has been established yet.

4 System: Trappes radiosonde launch site (TRP-RS-01)

Object	Value
System name	Trappes radiosonde launch site
Unique GRUAN ID	TRP-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	48.7730 °N, 2.0080 °E, 168.0 m
Operated by	MF | Meteo-France
Instrument contact	Marin, Frédéric
Started at	2015-04-01
Defined setups	1 (AUTO1)
Possible streams	M10

4.1 Lead Centre comments

4.1.1 Dataflow

Sonde dataflow to the GRUAN LC is operational in a fully automated mode since September 2019.

Currently, the dataflow is interrupted since December 2022.

4.1.2 General

Routine soundings are performed using Modem M10 radiosonde two times per day.

4.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI

4.2.1 Stream: M10

M10		629	629	
M10-GDP-BETA	001		596	

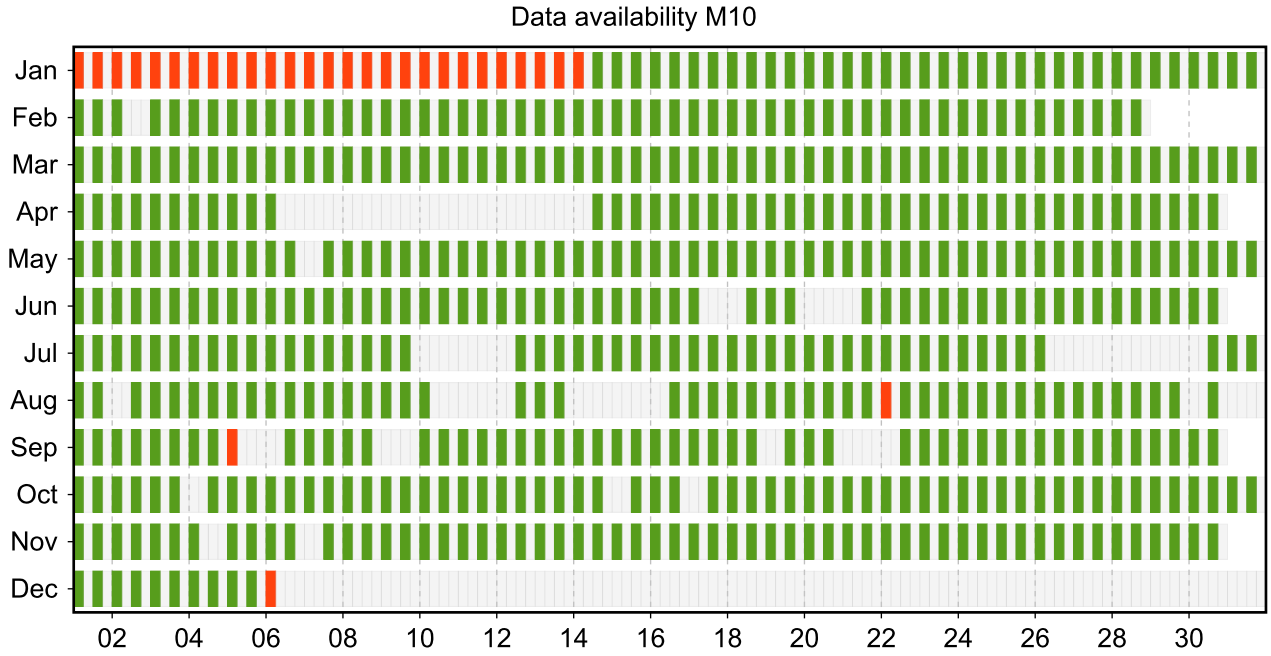
4.3 Availability of data products

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: M10



4.4 Instrument combinations of TRP-RS-01

Count	Instrument combination
629	M10

4.5 Instrument ground check

4.5.1 Stream: M10

(1) GroundCheck: GC-SHC

(2) GroundCheck: GC-TU(room)

4.6 Measurement events