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Session 5

La Réunion

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GRUAN Site Report for HongKong

(Submitted by LEUNG, Wai-hung)

Summary and Purpose of this Document

Report from the GRUAN site HongKong for the period January to December 2021.

Overview

HongKong was accepted as a GRUAN candidate site in July 2020. In 2021, HongKong continues to contribute to GRUAN with the operational data stream on Cryogenic Frostpoint Hygrometer (CFH) and ECC ozone sonde. All CFH and ECC ozone sonde launches were performed in accordance with GRUAN operational procedures, which means the application of a manufacturer-independent ground check of the RS41 radiosonde in a Standard Humidity Chamber (SHC) at 100% RH prior to launch. Data are submitted to the Lead Centre using the RsLaunchClient.

Change and change management

There were a couple of changes in the operating procedures in the station in 2021. Firstly, the GRUAN data flow for ECC ozone sonde data was successfully implemented in early 2021, in addition to the CFH data flow implemented in 2020. Secondly, the launch time of CFH had been scheduled around sunset to minimize possible insolation effect.

Resourcing

The situation at HongKong is positive, having stable financial and personnel resources to perform and sustain routine and scheduled launches.

Operations

In 2021, the operations related to CFH and ozone sonde launches, as well as the related data submission to the Lead Centre were performed smoothly. The supply of R23 cryogen continued to be stable in the near future.

Covid-19

In 2021, the operations related to GRUAN were normal in HongKong under the Covid-19 situation.

Site assessment and certification

HongKong has been a GRUAN candidate site since July 2020. The station plans to go through the certification process in the next couple of years.

GRUAN-related research

NIL

WG-GRUAN interface

NIL

Other archiving centers

GUAN, GAW (WOUDC, WDCGG, WRDC)

Participation in campaigns

NIL

Future plans

- Explore setting up GRUAN data flow for routine automatic and ad-hoc manual radiosonde launches of RS-41.
- Start the manufacturer-independent ground check of RS41 radiosonde in an SHC before loading into the autolauncher.
- Explore the inclusion of cloud observation, which is not performed on site, in the submitted data.
- Continue to explore including GNSS data flow from a reliable local source.



GRUAN Site Report for HongKong (HKO), 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	HongKong
Unique GRUAN ID	HKO
Geographical position	22.3100 °N, 114.1700 °E, 65.0 m
Operated by	HKO Hong Kong Observatory
Main contact	Lee, Olivia Shuk-ming
WMO no./name	45004 Kowloon
Operators	currently 1, changes +0 / -0
Sounding Site	2

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
HKO-RS-01	Hong Kong automatic upper-air sounding system	Sounding Site	2	0
HKO-RS-02	Hong Kong manual upper-air sounding system	Sounding Site	3	70

1.2 General comments from Lead Centre

No comments from Lead Centre.

2 System: Hong Kong automatic upper-air sounding system (HKO-RS-01)

Object	Value
System name	Hong Kong automatic upper-air sounding system
Unique GRUAN ID	HKO-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	22.3116 °N, 114.1726 °E, 66.0 m
Operated by	HKO Hong Kong Observatory
Instrument contact	Lee, Olivia Shuk-ming
Started at	2004-01-01
Defined setups	2 (ROUTINE, AD-HOC)
Possible streams	RS41

2.1 Lead Centre comments

2.1.1 Dataflow

Operational dataflow of radiosonde measurement data to the GRUAN LC started in July 2022.

Currently, the dataflow includes radiosoundings with Vaisala RS41-SG.

2.1.2 General

This is the autolauncher system.

3 System: Hong Kong manual upper-air sounding system (HKO-RS-02)

Object	Value
System name	Hong Kong manual upper-air sounding system
Unique GRUAN ID	HKO-RS-02
System type	Sounding Site (RS - Radiosonde)
Geographical position	22.3117 °N, 114.1726 °E, 66.0 m
Operated by	HKO Hong Kong Observatory
Instrument contact	Lee, Olivia Shuk-ming
Started at	1951-01-01
Defined setups	3 (OZONE, MOISTURE, AD-HOC)
Possible streams	CFH, ECC, RS41

3.1 Lead Centre comments

3.1.1 Dataflow

Operational dataflow of radiosonde measurement data to the GRUAN LC since October 2020.

Currently, the dataflow includes radiosoundings with Vaisala RS41-SG, ECC Ozone and CFH. All data are transmitted using the RsLaunchClient within one quarter after the sounding.

A regular measurement program for the observation of stratospheric water vapor was performed monthly using CPH.

3.1.2 General

This is the manual launching site.

3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
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3.2.1 Stream: CFH

CFH		10	10	
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3.2.2 Stream: ECC

ECC		41	41	
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3.2.3 Stream: RS41

RS41		70	70	
RS41-RAW	001		70	
RS41-EDT	001		70	
RS41-GDP	001		68	
RS41-GDP-BETA	002		23	
RS41-GDP-BETA	003		30	

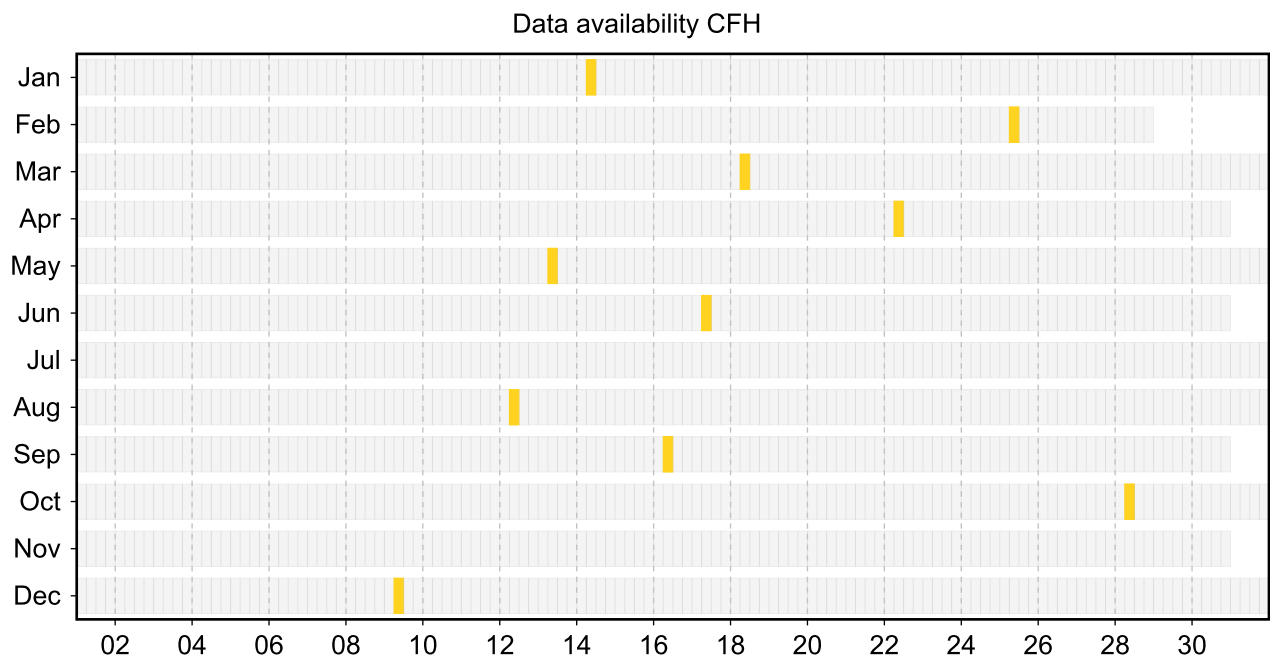
3.3 Availability of data products

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).

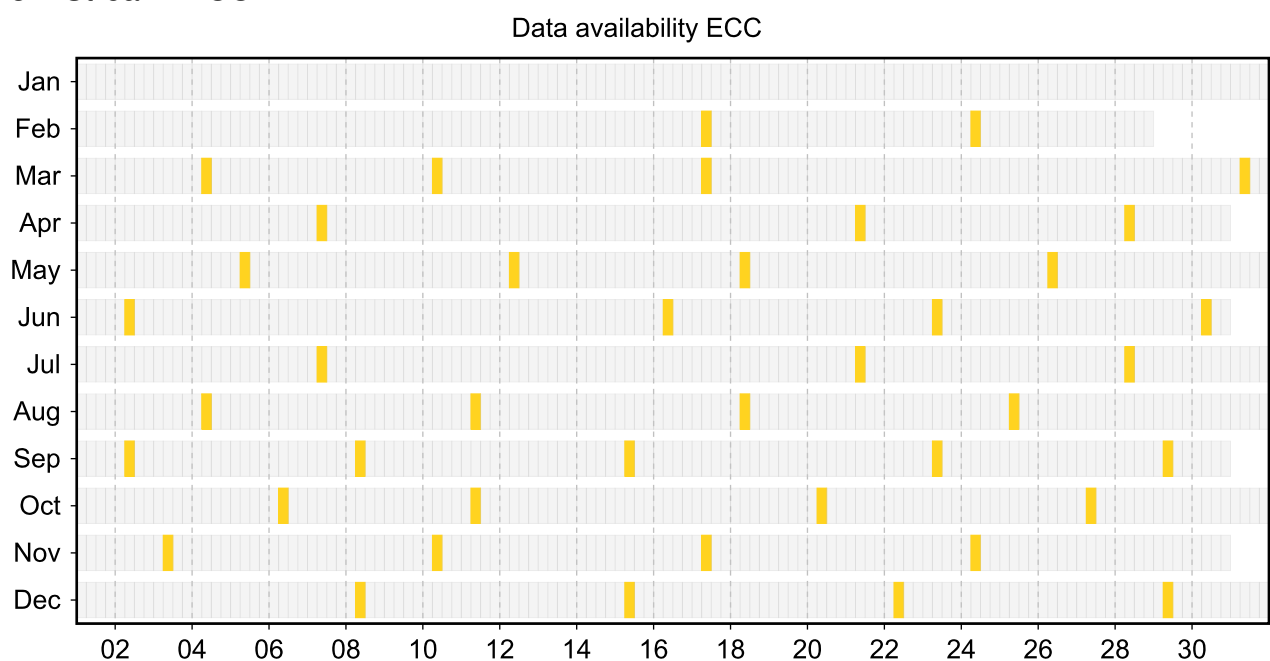
Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software 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.

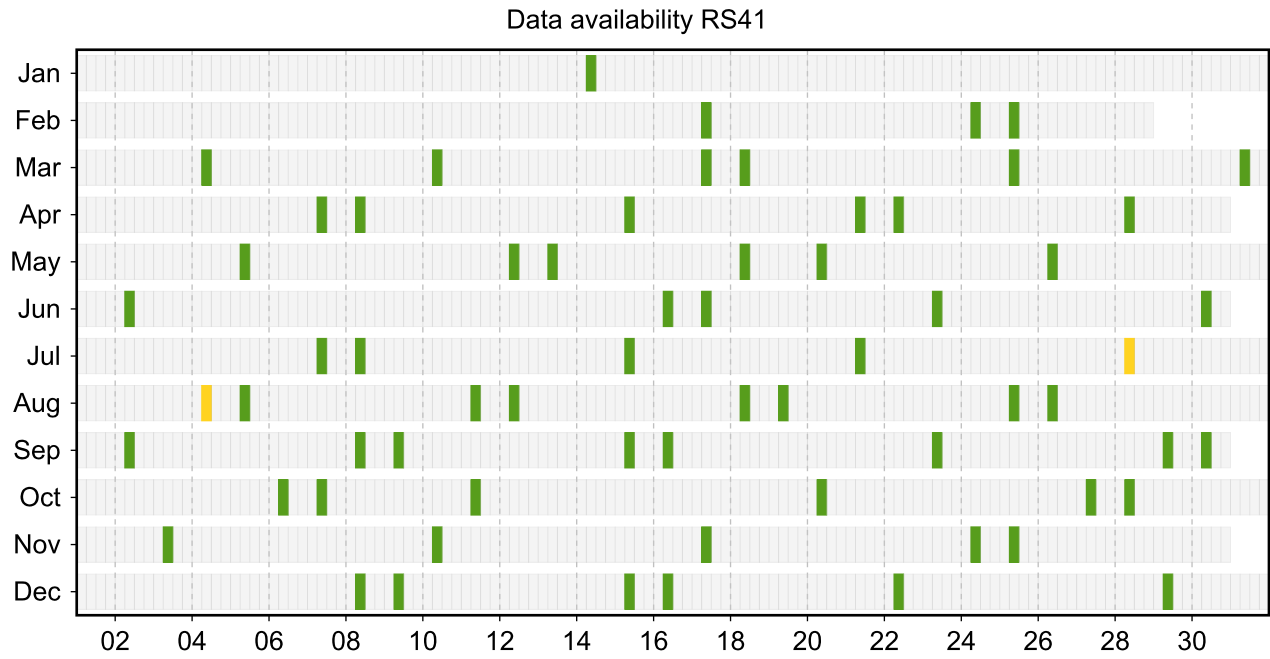
3.3.1 Stream: CFH



3.3.2 Stream: ECC



3.3.3 Stream: RS41



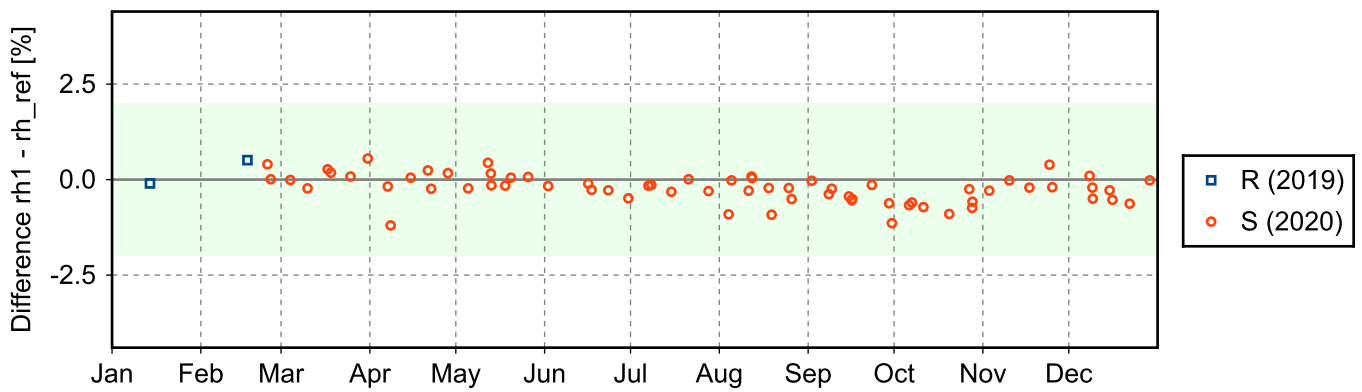
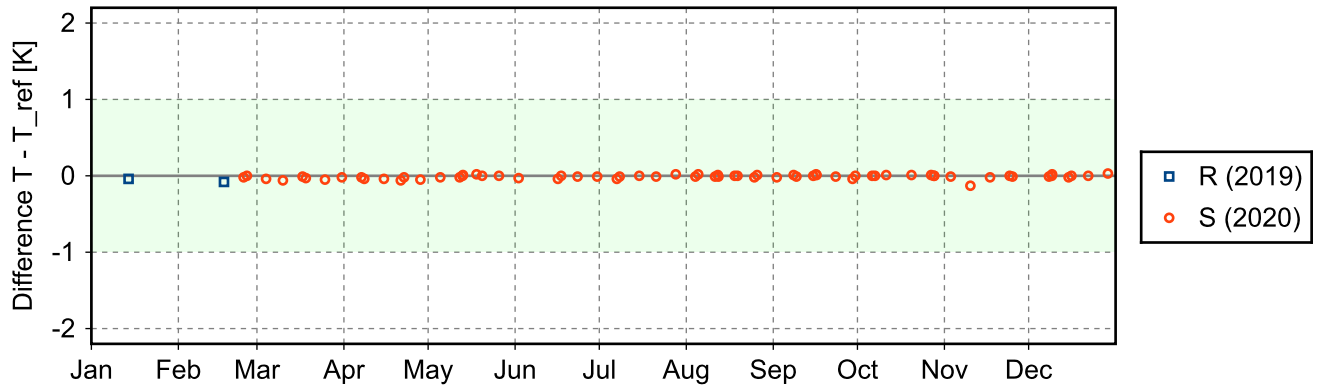
3.4 Instrument combinations of HKO-RS-02

Count	Instrument combination
10	CFH, RS41
41	ECC, RS41
19	RS41

3.5 Instrument ground check

3.5.1 Stream: RS41

(1) GroundCheck: GC-SHC



3.6 Measurement events

