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GLOBAL CLIMATE OBSERVING
SYSTEM (GCOS)

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**13th GRUAN Implementation-
Coordination Meeting (ICM-13)**

Session 1

Virtual

15 November - 19 November 2021

GRUAN Site Report for HongKong

(Submitted by Olivia Shuk-ming Lee)

Summary and Purpose of this Document

Report from the GRUAN site HongKong for the period January to December 2020.

Overview

HongKong was accepted as a GRUAN candidate site in July 2020. As of the end of 2020, HongKong contributes to GRUAN with the operational data stream on Cryogenic Frostpoint Hygrometer (CFH). All CFH 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, normally within days after the launch.

Change and change management

HongKong joined GRUAN as a candidate site in July 2020. Since then there were two changes in the operating procedures in the station. First, start of monthly launch of CFH since October 2020. Second, start of manufacturer-independent ground check of RS41 radiosonde in an SHC at 100% RH before CFH and ozone zoned launch, also since October 2020. The GRUAN data flow for CFH data has been successfully implemented in January 2021.

Resourcing

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

Operations

GRUAN data flow was successfully set up in January 2021 to submit data collected from monthly launch of CFH from October to December 2020. The supply of R23 cryogen was expected to be stable in short term. CFH launches were scheduled after sunset to minimize possible insolation effect. The difference in RH between SHC and RS41 was small, within 0.2% RH, for the three launches in 2020.

Covid-19

As of the end of 2020, the Covid-19 pandemic did not affect the operation of HongKong.

Site assessment and certification

HongKong is now a GRUAN candidate site and has not been certified. We expect the station will be ready to go through the certification process after a couple of years operation.

GRUAN-related research

NIL

WG-GRUAN interface

NIL

Other archiving centers

GUAN, GAW (WOUDC, WDCGG, WRDC)

Participation in campaigns

NIL

Future plans

- Continue to set up GRUAN data flow for ozonesonde and routine automatic radiosonde launches.
- Explore the possibility to include GNSS data flow from a reliable local source.



GRUAN Site Report for HongKong (HKO), 2020

Reported time range is Jan 2020 to Dec 2020

Created by the Lead Centre

Version from 2021-04-27

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	3

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

No comments from Lead Centre.

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

No comments from Lead Centre.

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		3	3	
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3.2.2 Stream: RS41

RS41		3	3	
RS41-GCA	001		3	
RS41-RAW	001		3	
RS41-EDT	001		3	
RS41-GDP-BETA	001		3	
RS41-GDP-BETA	002		3	

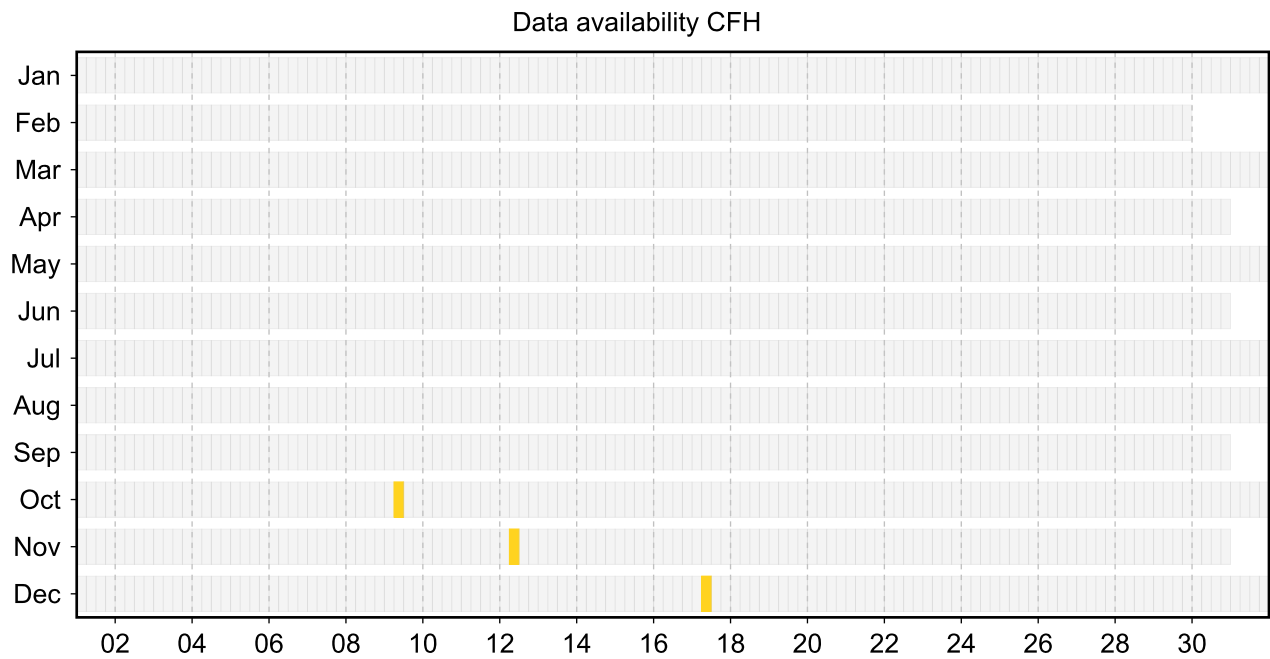
3.3 Availability of data products

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).

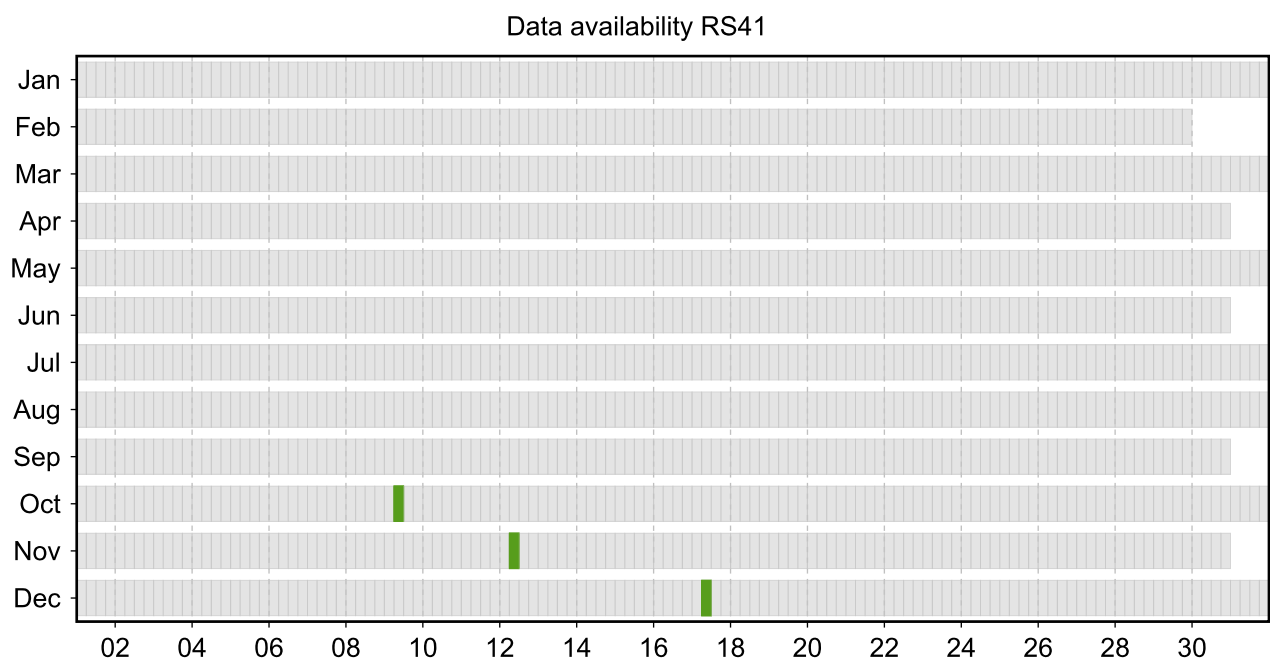
Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software 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: RS41



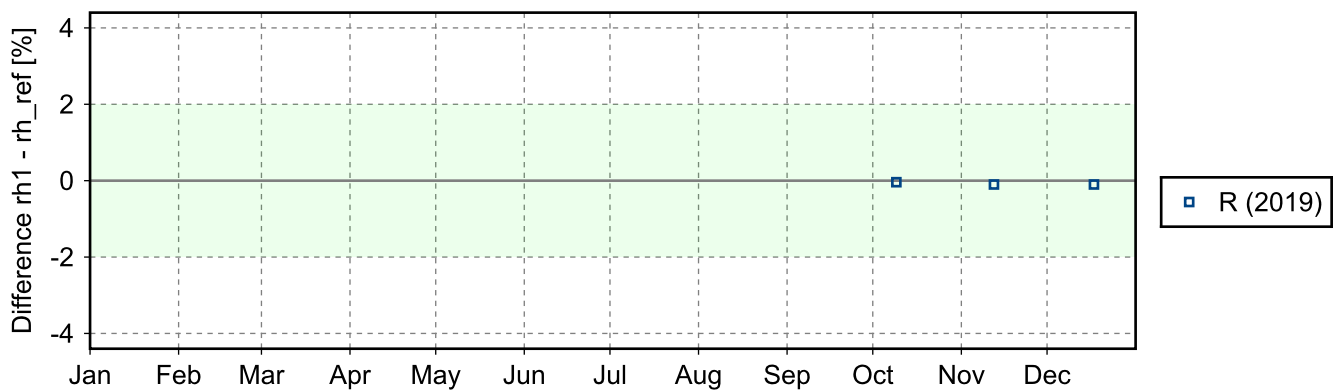
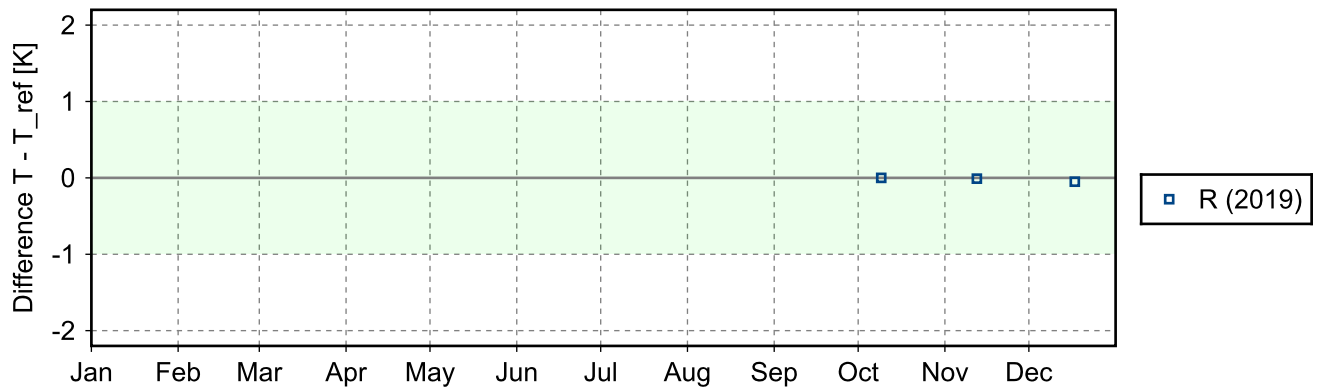
3.4 Instrument combinations of HKO-RS-02

Count	Instrument combination
3	CFH, RS41

3.5 Instrument ground check

3.5.1 Stream: RS41

(1) GroundCheck: GC-SHC



3.6 Measurement events

