



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

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**9th GRUAN Implementation-
Coordination Meeting (ICM-9)**

Session 7

Helsinki, Finland

12 - 16 June 2017

GRUAN Site Report for Lauder

(Submitted by Richard Querel)

Summary and Purpose of this Document

Report from the GRUAN site Lauder for the period March 2016 to April 2017.

Overview

The ozonesondes and frost-point hygrometers launched at Lauder have their associated radiosonde data (RS-92, RS-41, and I-Met) submitted to GRUAN. GNSS data are being submitted on a trial basis to GFZ. The radiosondes at nearby Invercargill are now being submitted to GRUAN as a Lauder-associated data product.

Change and change management

Operations are normal. We have finished our RS-92/RS-41 intercomparison flights and are now alternating launches on a weekly basis. A new SHC was provided to Invercargill so they could start performing that pre-flight calibration procedure. Their data is submitted to GRUAN by Lauder.

Resourcing

Lauder will be taking over the operations of the RIVM stratospheric ozone LIDAR on July 1, 2017, and the future of the PI-role for that instrument is unclear.

Operations

The Lauder frost-point hygrometer flights are valved and trigger at 28km, so will never reach the 10hPa target minimum burstpoint. Also, the balloons being launched by the MetService in Invercargill are standard 350g balloons, so are not expected to reach 10hPa either. If the value of higher burst heights can be demonstrated to MetService there may be the possibility of having them increase the balloon sizes, but it is not yet being considered.

Site assessment and certification

An audit of the Lauder site is expected to occur soon.

GRUAN-related research

Lauder-based SASBE of temperature is being prepared as Jordis Tradowskys PhD work (to be completed this calendar year). An ozone and water vapour SASBE are anticipated as follow-up projects. An ozonesonde GRUAN data product document is being contributed to.

WG-GRUAN interface

A support letter to NIWA and the NZ MetService outlining the value of the radiosondes being launched from Invercargill might help convince MetService to increase their balloon size.

Items for ICM-9 plenary discussions

Results from RS-92/RS-41 intercomparisons? Status of the RS-41 data product, or at very least access to QA/QC checks for RS-41. Golden-time overpass predictor needed.

Future plans

NDACC intercomparisons, data homogenisation efforts.



GRUAN Station Report for Lauder (LAU), 2016/17

Reported time range is Mar 2016 to Apr 2017

Created by the Lead Centre

Version from 2017-06-06

1 General GRUAN station information

Info	Value
Station name	Lauder
Unique GRUAN ID	LAU
Geographical position	-45.0500 °S, 169.6800 °E, 370.0 m
Operated by	NIWA National Institute of Water & Atmospheric Research
Main contact	Querel, Richard
WMO no./name	93817 LAUDER UPPER AIR
Operators	current 5, change +1 / -1
Sounding Site	2
GNSS	1

1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
LAU-GN-01	GNSS	1	operational	complete
LAU-RS-01	Sounding Site	6	59	96.72 %
LAU-RS-02	Sounding Site	1	504	82.89 %

1.2 General comments from Lead Centre

1.2.1 General

In March 2014, the dataflow from Lauder has started.

In September 2016, an additional dataflow of daily operational sounding from Invercargill has started.

2 System: GNSS Site LDRZ (LAU-GN-01)

Info	Value
System name	GNSS Site LDRZ
Unique GRUAN ID	LAU-GN-01
System type	GNSS (GN - GNSS)
Geographical position	-45.0380 °S, 169.6840 °E, n m
Operated by	NIWA National Institute of Water & Atmospheric Research
Instrument contact	Querel, Richard
Started at	2012-05-01
Defined setups	1 (HOURLY)
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

Measurements are recorded at station since May 2012.

Dataflow of GNSS data to GRUAN LC and the GRUAN GNSS processing centre at GFZ has started in February 2015. The current dataflow includes manufacturer raw data, converted raw data (RINEX) and instrument logs, containing all equipment changes.

3 System: Radiosonde Launch Site (Lauder) (LAU-RS-01)

Info	Value
System name	Radiosonde Launch Site (Lauder)
Unique GRUAN ID	LAU-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	-45.0500 °S, 169.6800 °E, 370.0 m
Operated by	NIWA National Institute of Water & Atmospheric Research
Instrument contact	Querel, Richard
Started at	-
Defined setups	6 (OZONE, FPH-OZONE, RS-ONLY, RS41-ONLY, RESEARCH, OZONE-2)
Possible streams	ECC, FPH, IMET-1, RS41, RS92

3.1 Lead Centre comments

3.1.1 Dataflow

Sonde dataflow to the GRUAN LC is operational since February 2014. This dataflow includes data from the Vaisala RS41-SG, RS92-SGP, ECC ozone sonde, FPH water vapour, and Internet IMET-1. All launches are transmitted using the RsLaunchClient.

Dual launches with RS92 and RS41 are performed since October 2015.

A GRUAN data product for the frostpoint hygrometer data is not yet available.

3.1.2 General

Ozone soundings are launched weekly. Research soundings using FPH, ECC, iMet-1, and Vaisala RS92 or RS41 are launched approximately once per month.

3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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3.2.1 Stream: ECC

ECC		59	59	
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3.2.2 Stream: FPH

FPH		6	6	
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3.2.3 Stream: RS41

RS41		44	44	
RS41-RAW	001		44	
RS41-EDT	001		44	44

3.2.4 Stream: RS92

RS92		52	52	
RS92-RAW	002		52	
RS92-EDT	001		52	52

3.3 Data availability of data products

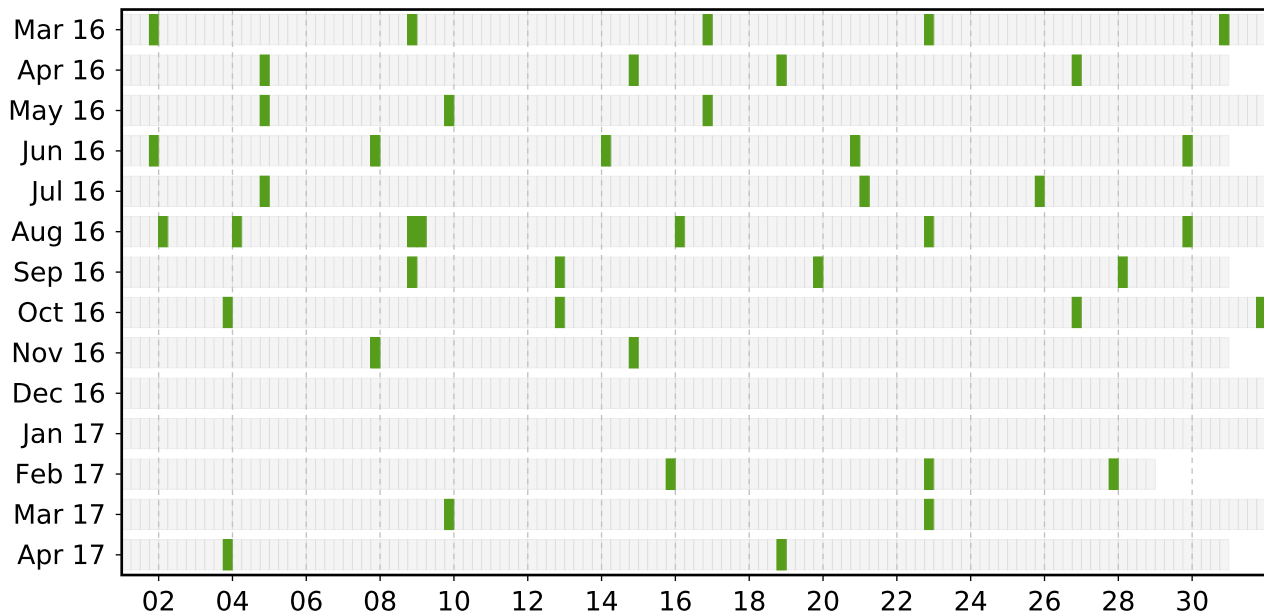
Available (green): All steps of processing have been successfully completed. The data file is available at NCEI (NCDC).

Unprocessed (yellow): The raw data file has been successfully converted to a GRUAN standardized raw data file format (NetCDF). The processing itself (e.g. extracting manufacturer data product or GRUAN data processing) is not done yet, or could not be completed. Reason may be missing raw data, or software bugs.

Failed (red): Raw data file could not be converted to a GRUAN standardized raw data file format (NetCDF). Reason may be a corrupt original raw data file, or software bugs.

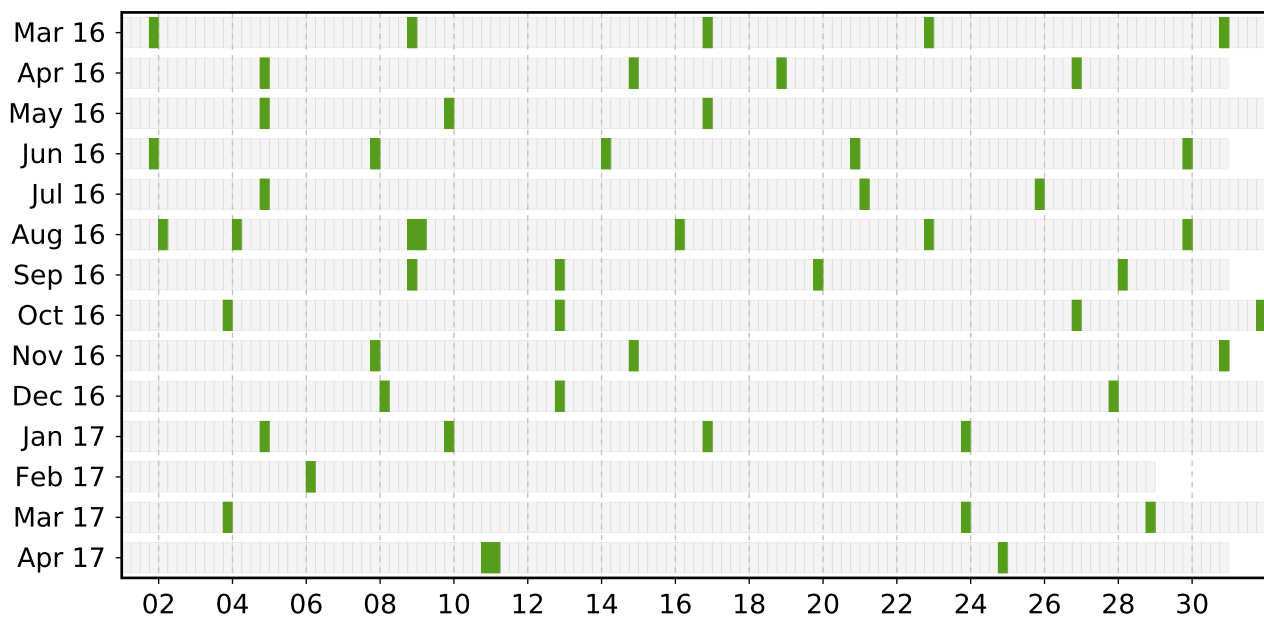
3.3.1 Stream: RS41 (Product: RS41-EDT-001)

Schedule data availability of stream RS41



3.3.2 Stream: RS92 (Product: RS92-EDT-001)

Schedule data availability of stream RS92



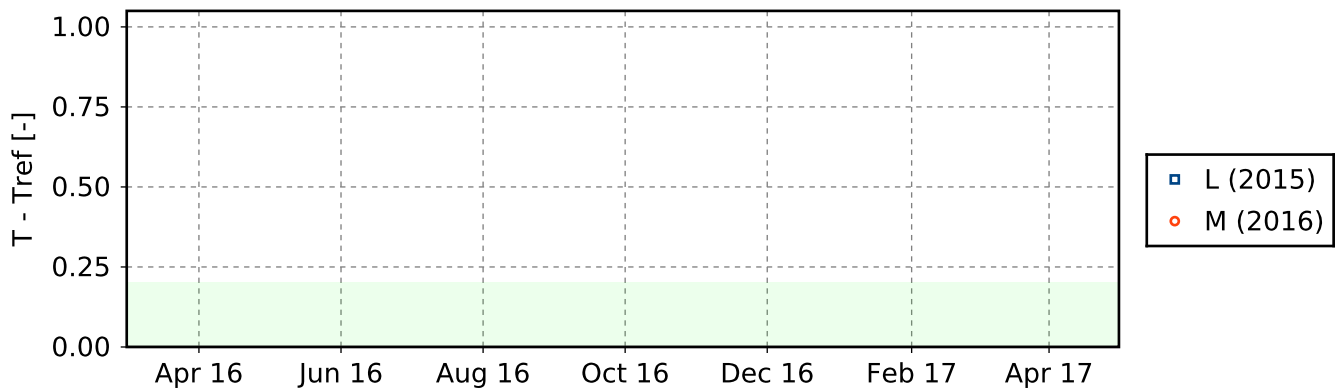
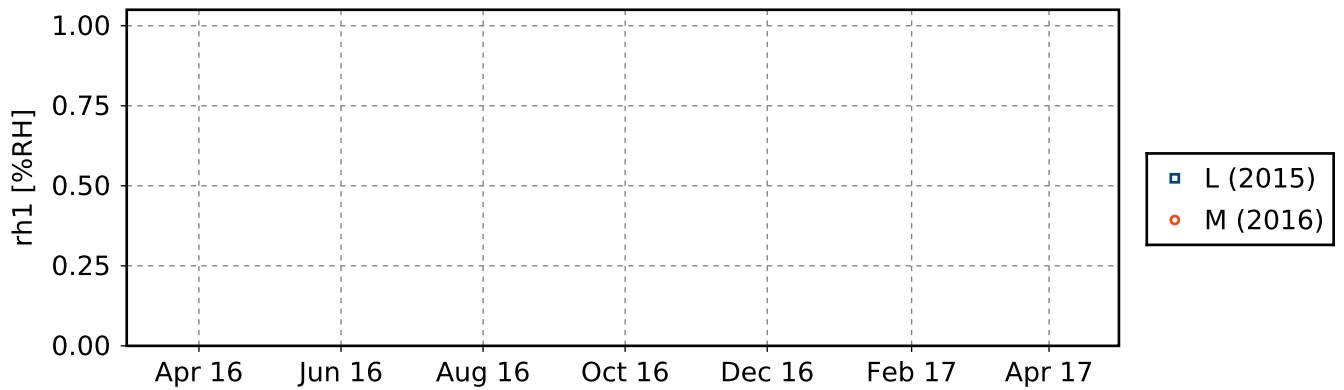
3.5 Instrument combinations of LAU-RS-01

Count	Instrument combination
6	ECC, FPH, RS41, RS92
7	ECC, RS41
31	ECC, RS41, RS92
15	ECC, RS92

3.6 Instrument ground check

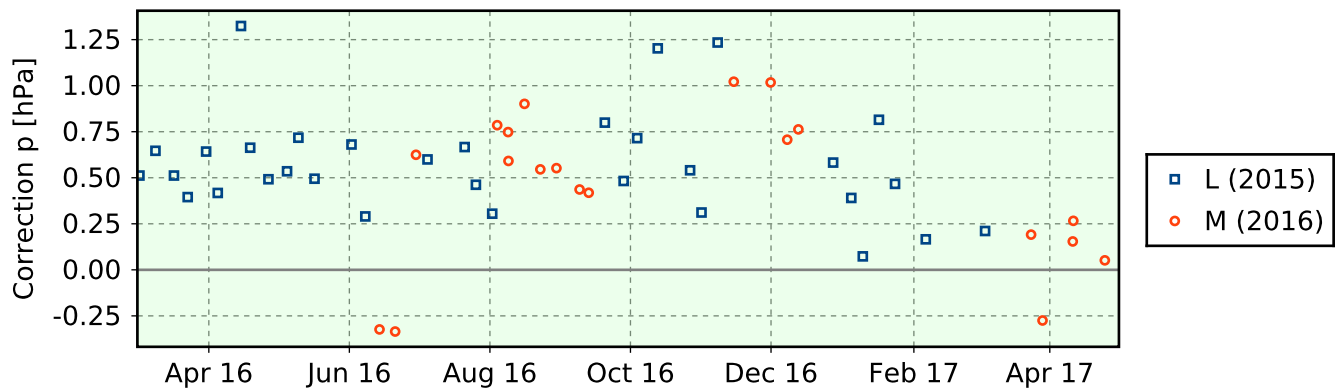
3.6.1 Stream: RS41

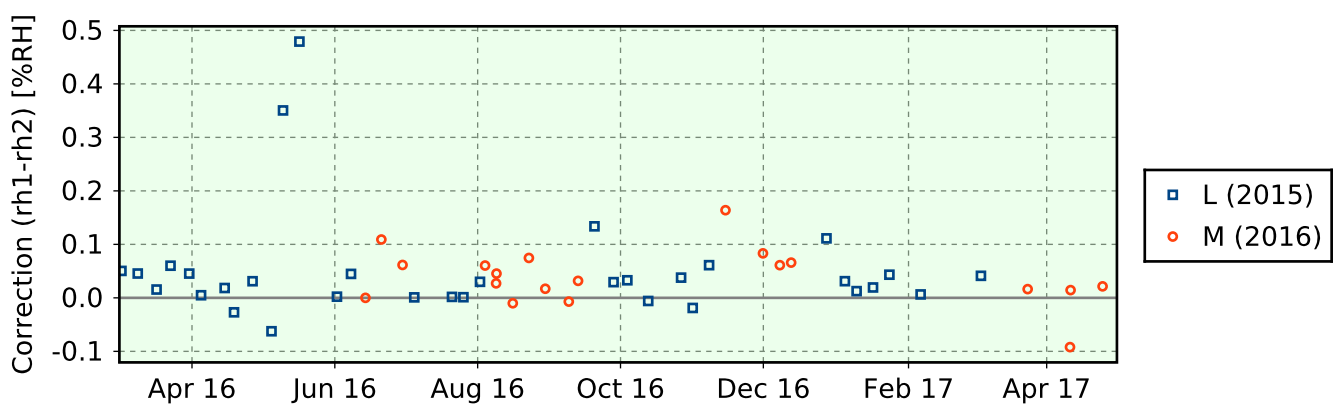
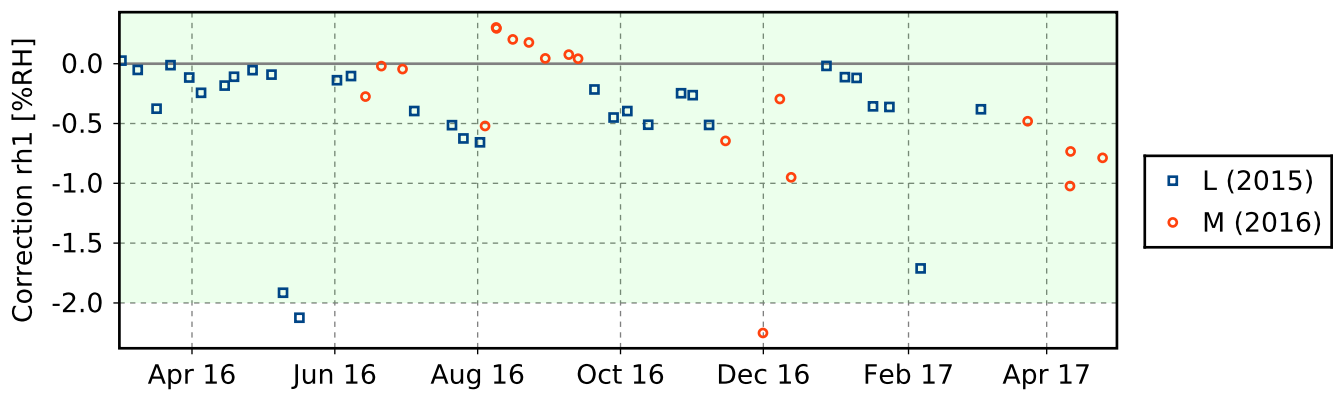
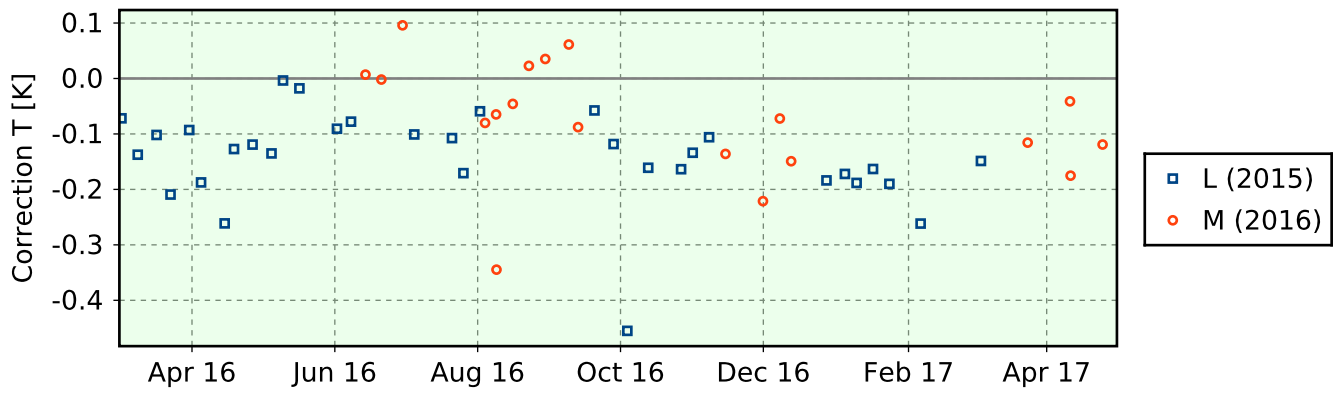
3.6.1.1 GroundCheck: SHC



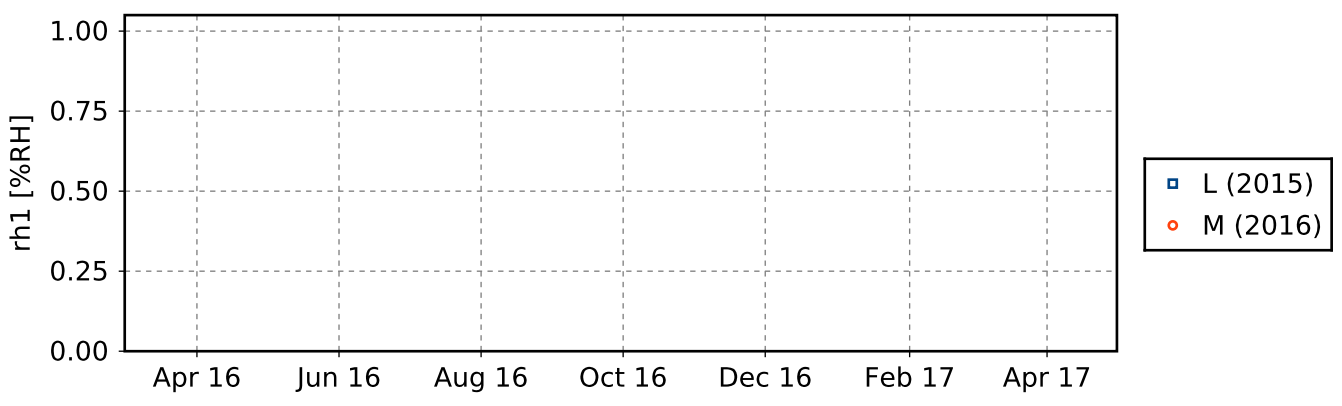
3.6.1 Stream: RS92

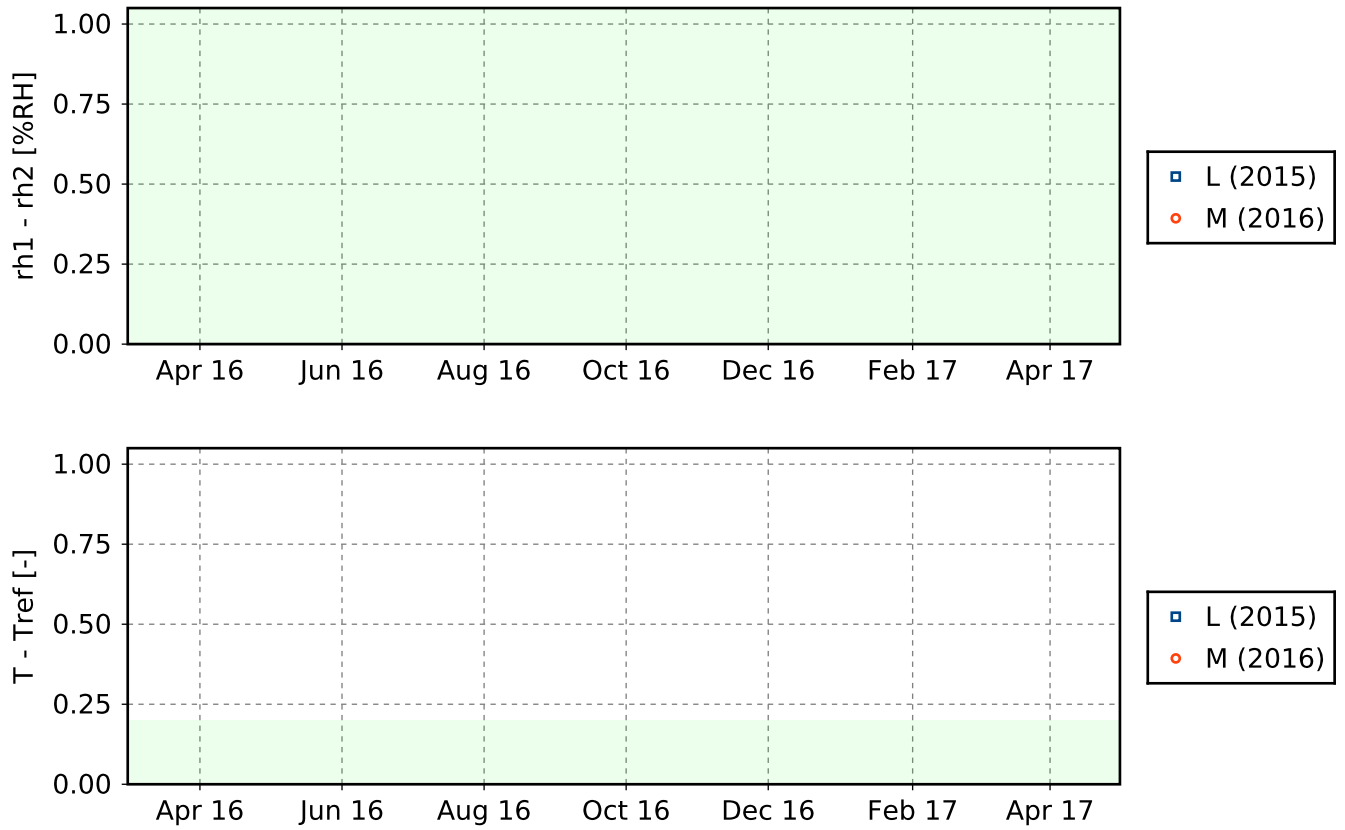
3.6.1.1 GroundCheck: GC25





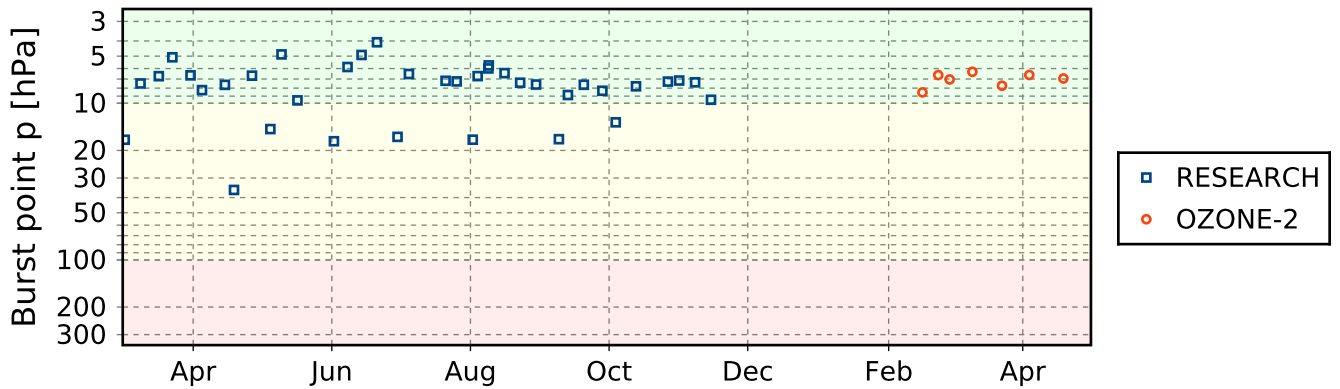
3.6.1.2 GroundCheck: SHC



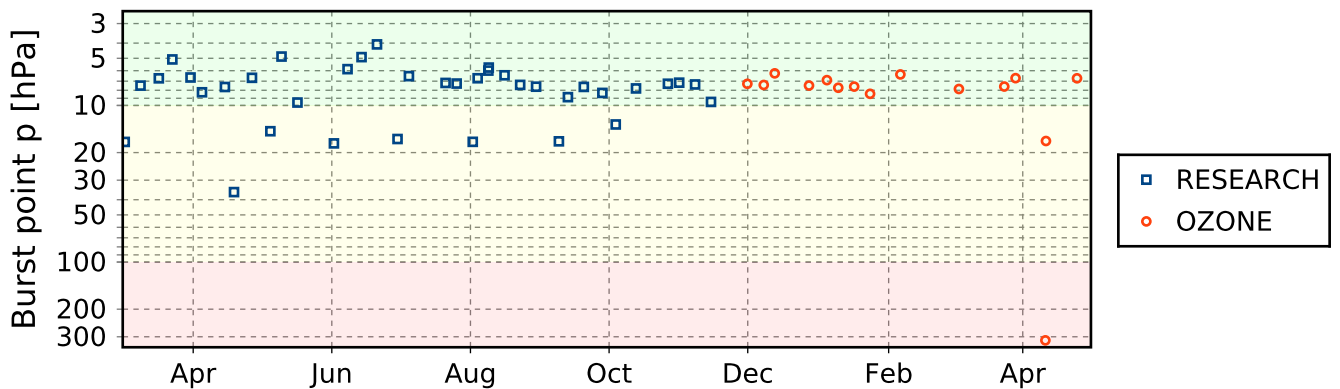


3.7 Measurement events

3.7.1 Stream: RS41



3.7.1 Stream: RS92



4 System: Radiosonde Launch Site (Invercargill) (LAU-RS-02)

Info	Value
System name	Radiosonde Launch Site (Invercargill)
Unique GRUAN ID	LAU-RS-02
System type	Sounding Site (RS - Radiosonde)
Geographical position	-46.4180 °S, 168.3305 °E, 2.0 m
Operated by	MET-SERVICE-NZ Meteorological Service of New Zealand Limited
Instrument contact	Querel, Richard
Started at	2016-07-01
Defined setups	1 (ROUTINE)
Possible streams	RS41

4.1 Lead Centre comments

4.1.1 Dataflow

Sonde dataflow of co-located site Invercargill to the GRUAN LC is operational since September 2016. This dataflow includes all twice daily operational soundings using the Vaisala RS41-SG.

4.1.2 General

Operational soundings using Vaisala RS41-SG are launched approximately twice daily since September 2016.

4.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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4.2.1 Stream: RS41

RS41		504	504	
RS41-RAW	001		502	
RS41-EDT	001		502	502

4.3 Data availability of data products

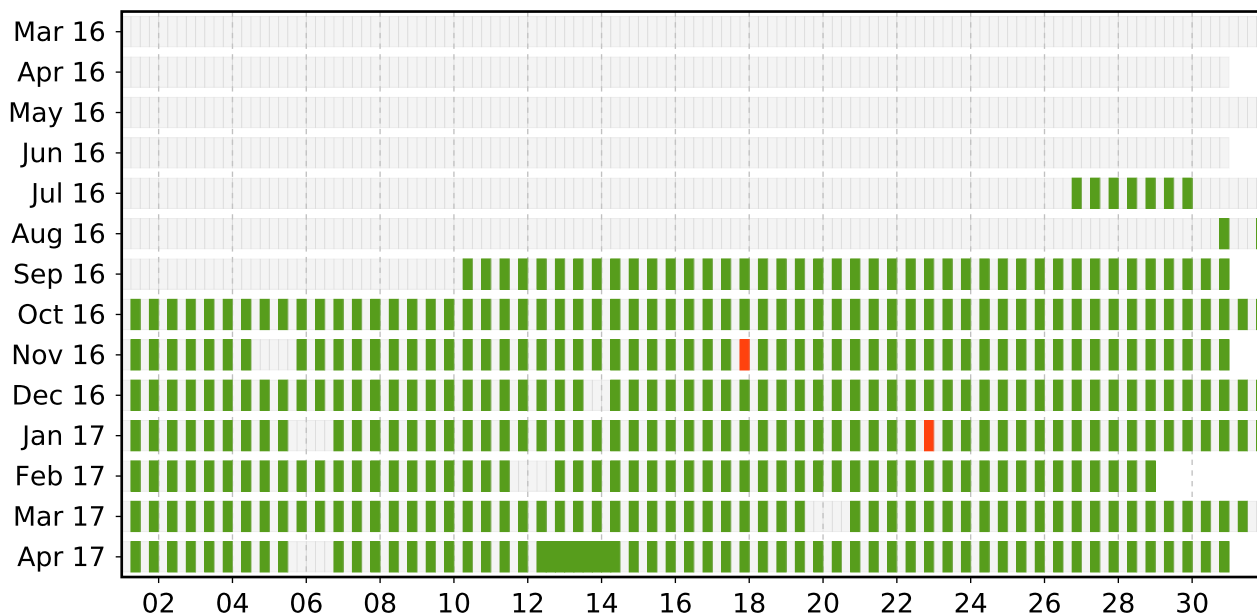
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Unprocessed (yellow): The raw data file has been successfully converted to a GRUAN standardized raw data file format (NetCDF). The processing itself (e.g. extracting manufacturer data product or GRUAN data processing) is not done yet, or could not be completed. Reason may be missing raw data, or software bugs.

Failed (red): Raw data file could not be converted to a GRUAN standardized raw data file format (NetCDF). Reason may be a corrupt original raw data file, or software bugs.

4.3.1 Stream: RS41 (Product: RS41-EDT-001)

Schedule data availability of stream RS41



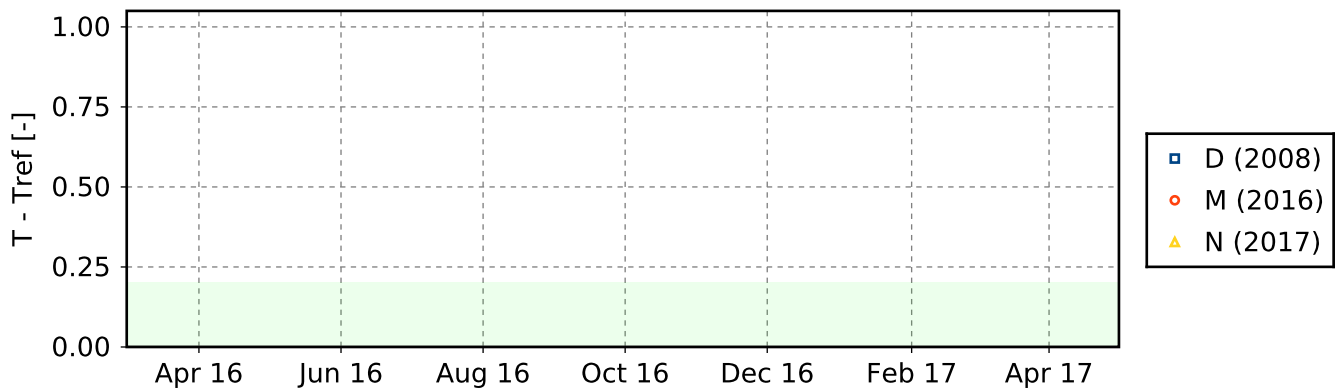
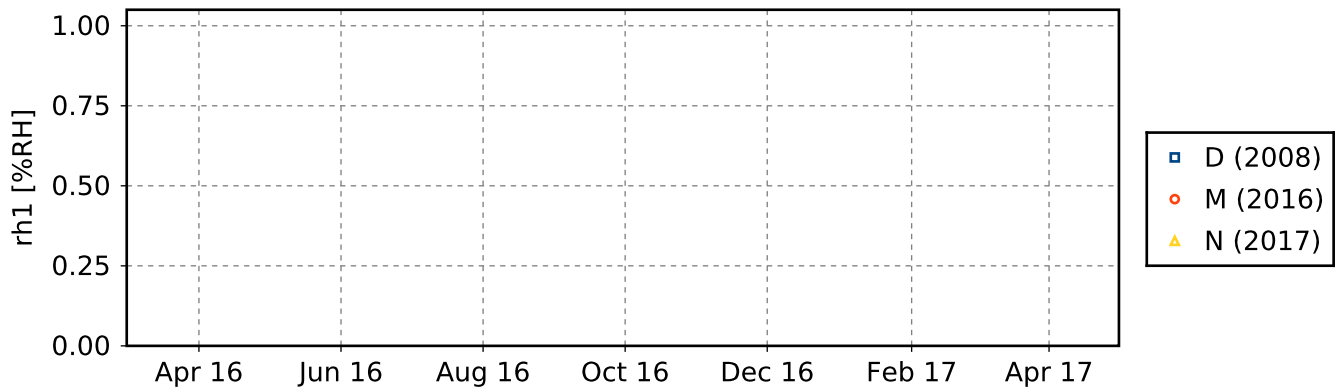
4.5 Instrument combinations of LAU-RS-02

Count	Instrument combination
504	RS41

4.6 Instrument ground check

4.6.1 Stream: RS41

4.6.1.1 GroundCheck: SHC



4.7 Measurement events

4.7.1 Stream: RS41

