

Update on GRUAN website

The GRUAN logo, consisting of the word 'GRUAN' in large, orange, sans-serif capital letters. The 'R' is partially overlaid by a blue globe with white grid lines, all set against a light blue circular glow.

Michael Sommer

GRUAN Lead Centre, DWD

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

Virtual, Session 4, 18 November 2021



5th anniversary of this GRUAN website <https://www.gruan.org>



GCOS Reference Upper-Air Network

The climate reference network

The Global Climate Observing System (GCOS) Reference Upper-Air Network (GRUAN) is an international reference observing network of sites measuring essential climate variables above Earth's surface, designed to fill an important gap in the current global observing system. GRUAN measurements are providing long-term, high-quality climate data records from the surface, through the troposphere, and into the stratosphere. These are being used to determine trends, constrain and calibrate data from more spatially-comprehensive observing systems (including satellites and current radiosonde networks), and provide appropriate data for studying atmospheric processes. GRUAN is envisaged as a global network of eventually 30-40 sites that, to the extent possible, builds on existing observational networks and capabilities.

GRUAN promotional video



This video provides an excellent overview of the goals and principles of GRUAN and its relation to the current challenges in climate research. You can find this and other public outreach material here.

Latest news

- Article | 2021-10-25

AMT paper Rosoldi et al. 2021 in review

"Intercomparison of Vaisala RS92 and RS41 radiosonde temperature sensors under controlled laboratory conditions" by Rosoldi et al. The paper is open...
- Article | 2021-09-29

AMT paper Lee et al. 2021 in review

"Radiation correction and uncertainty evaluation of RS41 temperature sensors by using an upper-air simulator" by Lee et al. The paper is open for...
- Article Data product | 2021-07-20

AMT paper von Rohden et al. 2021 in review

"Laboratory characterisation of the radiation temperature error of radiosondes and its application to the GRUAN data

➤ Network

- About GRUAN, Working Group, Lead Centre, Task Teams, [sites](#)

➤ Data

- [Measurements](#), [data products](#), [file archive](#), [software](#), data policy

➤ Instruments

- [Radiosondes](#), other in-situ sensors, other instruments

➤ Documentation

- WMO/GCOS documents, [GRUAN documents](#) (TD, TN, RP), public outreach, [peer-reviewed articles](#), FAQ, conference contributions, other publications

➤ Community

- [News](#), [meetings](#), campaigns, awards

Network

Information about organisation and parts of network

Data

Information about data, data handling and data products

Instruments

Information about instruments used at GRUAN stations

Documentation

Archive of and information about GRUAN-related documents

Community

Collection of all community tools

- About GRUAN - Working Group
- Lead Centre
- Task Teams -
- Sites -
- Alice Springs
- Barrow
- Beltville
- Boulder
- Cabauw
- Darwin
- Davis
- Dolgoprudny
- Graciosa
- Hong Kong
- Lamont
- Lauder**
- La Réunion
- Lindenberg
- Macquarie Island
- Melbourne
- Minamitorishima
- Neumayer
- Ny-Ålesund
- Paramaribo
- Payenne
- Polenzia
- Ros Island
- Singapore
- Sodankylä
- Syowa
- Tateno
- Tenerife
- Trappes Plateau
- Xinbin

Lauder (LAU) New Zealand



GRUAN Status

since 2014 active
since 2015 certified

Site Name

GRUAN (code, name) LAU Lauder
-short Lauder
-long, international Lauder Atmospheric Research Station
-long, national Lauder Atmospheric Research Station
WMO (code, name) 93817, Lauder

Location

Country New Zealand
Altitude 1.5 to 370 m

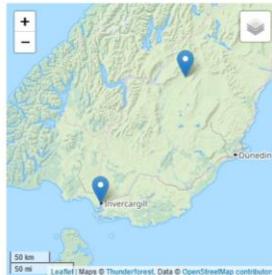
Site maps

Position and region map

Position map



Local map



Site Contact for purposes of GRUAN activities

Name Richard Querel
Affiliation NIWA
Address Lauder, State Highway 85, Central Otago, Priv
E-Mail Richard.querel@niwa.co.nz
Phone +64 3 440 0400
Fax +64 4 386 0574

Site contact

The GRUAN site "Lauder" is a cooperation from two national organizations

Site Locations

Lauder Invercargill



Position

Country New Zealand
Federal state Southland
Latitude 46.42 °S
Longitude 168.3 °E
Altitude 1.5 m

Institution / Operator

Name MetService
-long, international Meteorological Service of New Zealand Ltd
-long, national Meteorological Service of New Zealand Ltd
Website www.metservice.com
Description National Meteorological Service

Contact

Name Kevin Alder
Affiliation MetService
Address 30 Salamanca Road, Kiburn, Wellington 6012, New Zealand
E-Mail kevin.alder@metservice.com
Phone
Fax

Site locations

Description of Location

Foundation 1939-09-01
Description The observation site lies 500m southeast of Invercargill Airport and 1.5 km to the west of the Invercargill city centre (pop. 50,000), in an open farmland setting at the head of the New River Estuary.
General type rural
Topography coastal plain
Land use (within 10 km) Grassland / cropland 60 %, open water 10 %, settlements 30 %
Climate moderate maritime mid-latitude
Website www.metservice.com

Membership In Other Networks

GSN since 1997
GUAN since 1997

Relevant Documents

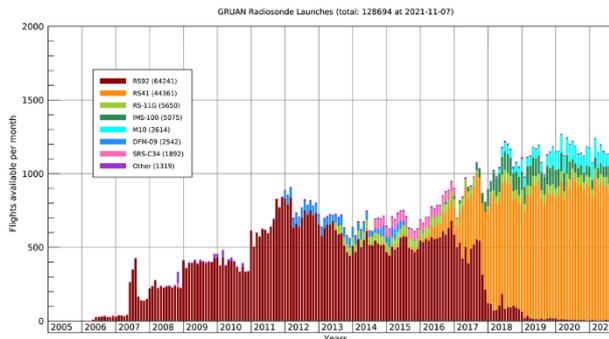
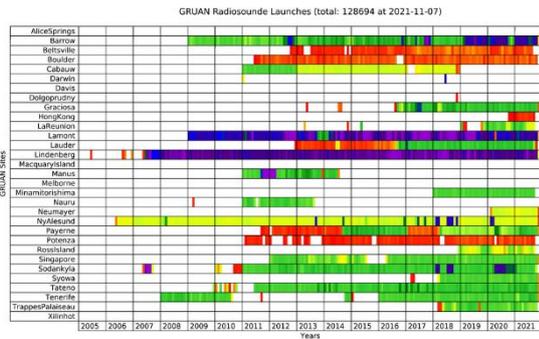
- ICM-12 (2020) [GRUAN Site Report for Lauder - Richard Querel](#)
- ICM-11 (2019) [GRUAN Site Report for Lauder - Richard Querel](#)
- ICM-10 (2018) [GRUAN Site Report for Lauder - Richard Querel](#)
[A Site Atmospheric State Best Estimate of Temperature for Lauder, New Zealand - Jordis Tradowsky](#)
- ICM-9 (2017) [GRUAN Site Report for Lauder - Richard Querel](#)
[Update from Lauder - Richard Querel](#)
[Partnering with operational meteorology: Lauder's new invercargill-based data stream - Richard Querel](#)
- ICM-8 (2016) [GRUAN Station Report for Lauder - Richard Querel](#)
- ICM-7 (2016) [GRUAN Station Report for Lauder - Richard Querel](#)
[Update on Lauder as a GRUAN station - Richard Querel](#)
- ICM-6 (2014) [GRUAN Station Report for Lauder - Richard Querel](#)
[Lauder Update - Richard Querel](#)
- ICM-6 (2013) [NIWA's Contribution to GRUAN - Olaf Morgenstern](#)
- ICM-4 (2012) [Lauder Report for ICM-4 Meeting, Tokyo, 5 - 9 March 2012 - Paul Johnston and Karin Johnson](#)
[New Zealand - Lauder Site Report - Paul Johnston and Karin Johnson](#)
- ICM-3 (2011) [Site Report: Lauder, New Zealand - Paul Johnston](#)
[New Zealand - Lauder Site Report - Paul Johnston](#)
- ICM-2 (2010) [Site report: Lauder, New Zealand - Paul Johnston](#)
[New Zealand - Lauder Site Report - Paul Johnston](#)
- ICM-1 (2009) [Site report: New Zealand Lauder - Paul Johnston](#)
[New Zealand - Lauder - Paul Johnston](#)
- Lindenberg (2008) [Lauder, New Zealand within Network for Detection of Atmospheric Composition Change \(NDACC\) - Paul Johnston](#)

Related documents

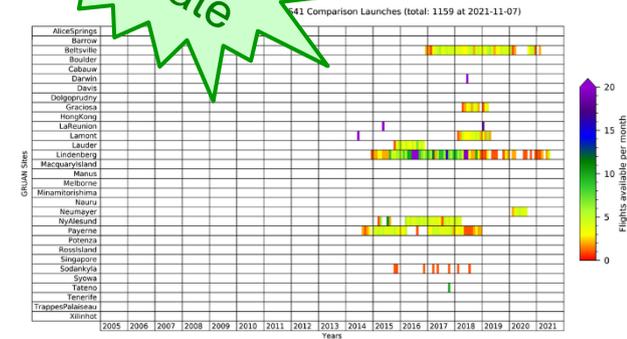
→ Please check yearly & contact LC



➤ Sonde launches & comparisons (plots & lists)



weekly update



➤ Status of current data flow (plots) → daily update

daily update

ALC-RS-01
Alice Springs radiosonde launch site

Last measurement: <no data yet>
Last data input: <no data yet>

0 measurements available within the last 30 days
Available streams are <none>

Data flow of last 30 days since 2021-11-10T06:04:48Z:

MAN-RS-01
Balloon-Borne Sounding System (SONDE) at Manus

Last measurement: 2014-07-06T12:00:00Z
Last data input: 2014-07-09T21:49:46Z

0 measurements available within the last 30 days
Available streams are <none>

Data flow of last 30 days since 2021-11-10T23:16:03Z:

PAY-RS-02
Automatic Payerne Launch System (Autosonde)

Last measurement: 2021-11-10T00:00:00Z
Last data input: 2021-11-10T05:05:28Z

39 measurements available within the last 30 days
Available streams are RS41

Data flow of last 30 days since 2021-11-10T05:05:28Z:

TEN-RS-01
Tenerife Automatic Radiosonde Launch System (AUTOSONDE)

Last measurement: 2021-11-09T23:00:00Z
Last data input: 2021-11-10T06:04:48Z

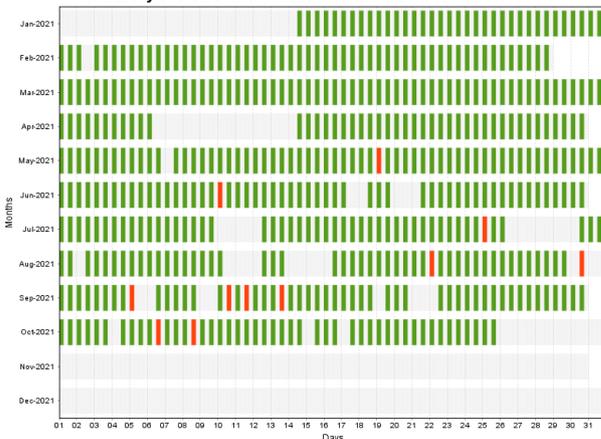
63 measurements available within the last 30 days
Available streams are RS41

Data flow of last 30 days since 2021-11-10T23:16:48Z:

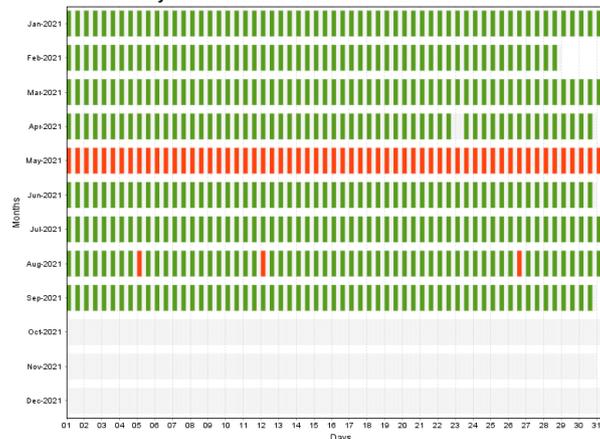


➤ Availability of data products
→ monthly update

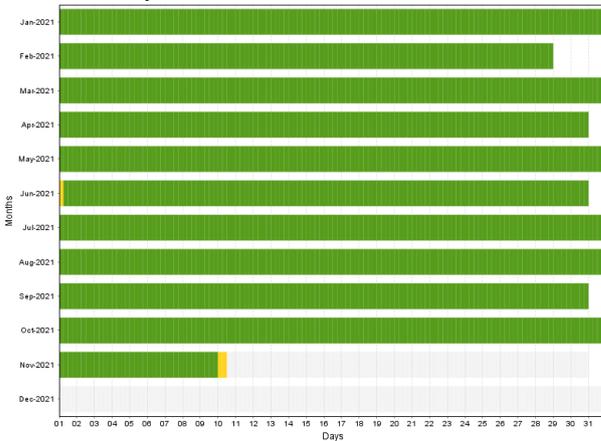
Availability of GRUAN Data Product M10-GDP-BETA.1 at TRP-RS-01



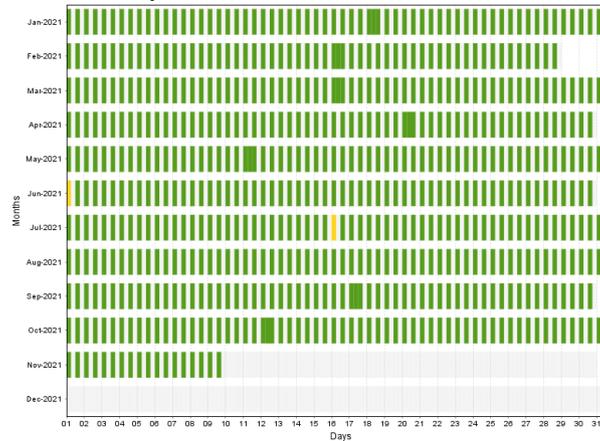
Availability of GRUAN Data Product IMS-100-BETA.2 at MTS-RS-01



Availability of GRUAN Data Product RS41-GDP-BETA.3 at LIN-RS-01



Availability of GRUAN Data Product RS41-GDP-BETA.3 at TAT-RS-01



Site: Product: Year:

Available Data

- All sites ⇒ RS41 GRUAN Data Product BETA 3 ⇒ 2021
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2005
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2006
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2007
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2008
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2009
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2010
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2011
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2012
- All sites ⇒ RS92 Vaisala Data Product Version 1 ⇒ 2013

Availability of GRUAN Data Product RS41-GDP-BETA.3



Legend

The data availability status refers to different data products. Currently we have three availability levels and all data we have received are ranked within these three categories:

Available (green): All steps of processing have been successfully completed. The data file is available at NCDC (GDP only) and at GRUAN Lead Centre (all other products).

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





File archive

Direct access to all published files

National Centers for Environmental Information (NCEI)

FTP access to all certified and published GRUAN data

- [RS92-GDP.2](#) <ftp://ftp.ncei.noaa.gov/pub/data/gruan/processing/level2/RS92-GDP/version-002> (anonymous ftp)
- [RS-11G-GDP.1](#) <ftp://ftp.ncei.noaa.gov/pub/data/gruan/processing/level2/RS-11G-GDP/version-001> (anonymous ftp)

Anonymous access (NCEI)

GRUAN Lead Centre (at DWD)

Please contact the GRUAN Lead Centre (gruan.lc@dwd.de, [formular](#)) to get access to GRUAN data files in following cases. You need access to:

1. Uncertified GRUAN data products (currently in certification process, or certification process is not started yet)
2. Beta or development versions of upcoming GRUAN data products
3. Converted raw data files
4. Original raw data files
5. RS92 vs. RS41 comparison data set (see also page [comparison](#))

Following information is recommended to send to the GRUAN Lead Centre in case of a request:

- Who are you? (person and institute)
- What is the reason? (study, campaign, comparison, ...)
- Which are the relevant time range and sites?
- Which data products are you interested in?
- All other facts which help us to understand your request.

Data access

Virtual central access point to all available GRUAN data

Please try this version of our virtual file archive. If you find any issue, please contact the GRUAN Lead Centre. If someone needs access to other files, please contact the GRUAN Lead Centre.

- [RS92-GDP.2](#) [Access to GRUAN data product RS92-GDP.2 \(hosted by LC\)](#)
- [RS-11G-GDP.1](#) [Access to GRUAN data product RS-11G-GDP.1 \(hosted by LC\)](#)
- [RS92-EDT.1](#) [Access to Vaisala data product RS92-EDT.1 \(hosted by LC\)](#)
- [RS41-EDT.1](#) [Access to Vaisala data product RS41-EDT.1 \(hosted by LC\)](#)
- [Compare RS41-RS92](#) [Access to GRUAN and Vaisala comparison data set \(hosted by LC\)](#)

Access for all registered user

Beta versions

- [RS41-GDP-BETA.3](#) [Access to BETA version 3 of RS41 GRUAN data product \(hosted by LC\)](#)
- [RS-11G-BETA.2](#) [Access to BETA version 2 of RS-11G GRUAN data product \(hosted by LC\)](#)
- [IMS-100-BETA.2](#) [Access to BETA version 2 of IMS-100 GRUAN data product \(hosted by LC\)](#)
- [IMS-100-BETA.1](#) [Access to BETA version 1 of IMS-100 GRUAN data product \(hosted by LC\)](#)
- [M10-GDP-BETA.1](#) [Access to BETA version 1 of M10 GRUAN data product \(hosted by LC\)](#)

Access for special user only (BETA tester)

Access to the comparison dataset RS41 - RS92

Hosted by LC

This comparison dataset includes several data products:

- [RS92-GDP.2](#) (GRUAN): Please find a description about data product on page [RS92-GDP.2](#).
- [RS92-EDT.1](#) (Vaisala): Please find a description about data product on page [RS92-EDT.1](#).
- [RS41-EDT.1](#) (Vaisala): Please find a description about this data product on page [RS41-EDT.1](#).

Link to description

search

1 2

Index of: [Comparison-DS RS41-RS92 \(GRUAN & Vaisala\) / RS41-GDP.1 / GVN / 2020](#)

[Switch to the parent folder](#)

Name	Info	Modified
GVN-RS-01_2_RS41-GDP_001_20200222T120000_1-000-001.nc	4113 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200229T120000_1-000-001.nc	4134 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200307T120000_1-000-001.nc	4224 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200314T120000_1-000-001.nc	4328 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200321T120000_1-000-001.nc	4285 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200328T120000_1-000-001.nc	3250 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200403T120000_1-000-001.nc	4050 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200411T120000_1-000-001.nc	4146 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200418T120000_1-000-001.nc	4144 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200425T120000_1-000-001.nc	4083 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200502T120000_1-000-001.nc	4126 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200510T120000_1-000-001.nc	4112 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200516T120000_1-000-001.nc	3883 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200527T120000_1-000-001.nc	3861 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200530T120000_1-000-001.nc	3707 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200604T120000_1-000-001.nc	3433 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200613T120000_1-000-001.nc	3788 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200622T120000_1-000-001.nc	3476 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200627T120000_1-000-001.nc	3245 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200705T120000_1-000-001.nc	3154 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200710T120000_1-000-001.nc	3204 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200718T120000_1-000-001.nc	2792 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200728T120000_1-000-001.nc	2855 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200801T120000_1-000-001.nc	2871 KB	2021-11-11
GVN-RS-01_2_RS41-GDP_001_20200816T120000_1-000-001.nc	3349 KB	2021-11-11

1 2

Filter & navigate

Download full folder (if not too large)

Download single files





- RsLaunchClient
 - Raw data and meta-data collecting tool for radiosounding
- gtRsl – GRUAN Tool RsLaunch
 - Command line tool to prepare simple radiosonde launches for upload to GRUAN
- gt92 – GRUAN radiosonde file converting tool
 - Command line tool for handling radiosonde data files
- gm41 – GRUAN monitor MW41
 - Tool for Vaisala MW41 online Xdata decoding and web visualization

GruanToolRS92 (gt92)

Command line tool for handling radiosonde data files

Details

ID `gt92`
Title `GruanToolRS92`
Author `Michael Sommer (GRUAN Lead Centre)`

General information

Brief description Command line tool which can be used to handle a couple of radiosounding-specific file formats. Files can be tested, converted, extracted and more.

Version `0.5.2` (2021-02-18)

Status `Stable`

Download

Full installation [GruanToolRS92-v0.5.2.zip](#) (zip)

Program file only [GruanToolRS92.jar](#) (jar)

Download (login)

Description

• [GRUAN-TN-11: M. Sommer: Brief Description of GruanToolRS92 \(gt92\) \(2020-10-01\)](#), PDF

Documents

History

Version 0.5.2 (2021-02-18 to now)
Version 0.5.1 (2020-08-04 to 2020-10-30)
Version 0.5.0 (2019-11-06 to 2020-04-29)
Version 0.4.11 (2019-03-28 to 2019-10-23)
Version 0.4.10 (2018-05-19 to 2019-03-19)
Version 0.4.9 (2018-02-28 to 2018-04-16)
Version 0.4.8 (2017-10-23 to 2018-01-05)
Version 0.4.7 (2016-11-23 to 2017-03-17)
Version 0.4.6 (2016-08-01 to 2016-11-23)
Version 0.4.5 (2016-02-18 to 2016-07-29)
Version 0.4.4 (2016-01-13 to 2016-02-16)
Version 0.4.3 (2016-01-06)
Version 0.4.2 (2015-12-16)
Version 0.4.1 (2015-12-14 to 2015-12-15)
Version 0.4.0 (2015-12-11)

Full history with details



➤ Radiosondes

- Different sonde models
- Descriptions & flight statistics

somewhat limited

➤ Other sensors

- Ozone, water vapour, temperature, aerosol
- Flight statistics only

rudimentary

➤ Other instruments

- GNSS, LIDAR, MWR, ...

missing

Who can write something? → task team members?

Meisei IMS-100

Details

General information

Model IMS-100

Manufacturer Meisei (www.meisei.co.jp/english/)

Weight 38 g

Size 55 x 53 x 131 mm

Sensors Pressure: derived from GPS
Temperature: thermistor
Humidity: electrostatic capacitance humidity sensor
Position: GPS

Measurement cycle 1 s

Available since 2014

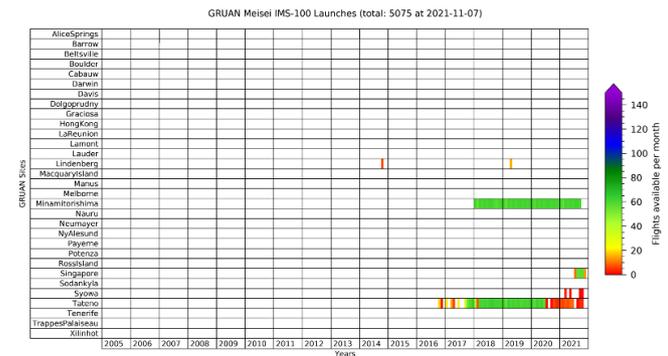
Ground system Ground receiver RD-08AC with MGPS-R sounding software

Ground check Meisei ground check tool which is part of the Meisei RD-08 Sounding System



Meisei IMS-100

Archived soundings by GRUAN



Data products

- IMS-100-BETA.2 – development version of [IMS-100-GDP.2](#)

Related documents

GRUAN

- [GRUAN-TD-5](#): Kizu et al. (2018): Technical characteristics and GRUAN data processing for the Meisei RS-11G and IMS-100 radiosondes

Meisei

- [IMS-100 on the Meisei website](#)
- [IMS-100 datasheet \(pdf\)](#)



➤ Technical Documents (TD)

- with official review process
- 5 published
- > 6 in preparation

➤ Technical Notes (TN)

- without official review process
- 10 published
- > 6 in preparation

➤ Reports (RP)

- 4 published

Should information be available on documents in progress?

Global Navigation Satellite System (GNSS) - Precipitable Water (PW) Omnibus

GRUAN-TD-6

Details

ID GRUAN-TD-6

Title Global Navigation Satellite System (GNSS) - Precipitable Water (PW) Omnibus

Authors Junhong Wang, Kalev Rannat, Jonathan Jones, Michael Sommer, Galina Dick, and Matthew Hanson

Last version **v2.0** (2019-08-21)

Status **Published**

Download [PDF](#)



Publisher
GOS Lead Centre

Number & Version
GRUAN-TD-6
v. 2.0 (2019-08-21)

Abstract

This omnibus provides detailed guidelines on the GRUAN GNSS-PW measurement program, including instrumentation, operation procedures and all aspects of data management. It also addresses specific GRUAN requirements, such as reference measurements, measurement uncertainty and managing changes.

History

v2.0 (2019-08-21) Wang et al., Global Navigation Satellite System (GNSS) - Precipitable Water (PW) Omnibus, GRUAN-TD-6, [v2.0 \(2019-08-21\)](#).

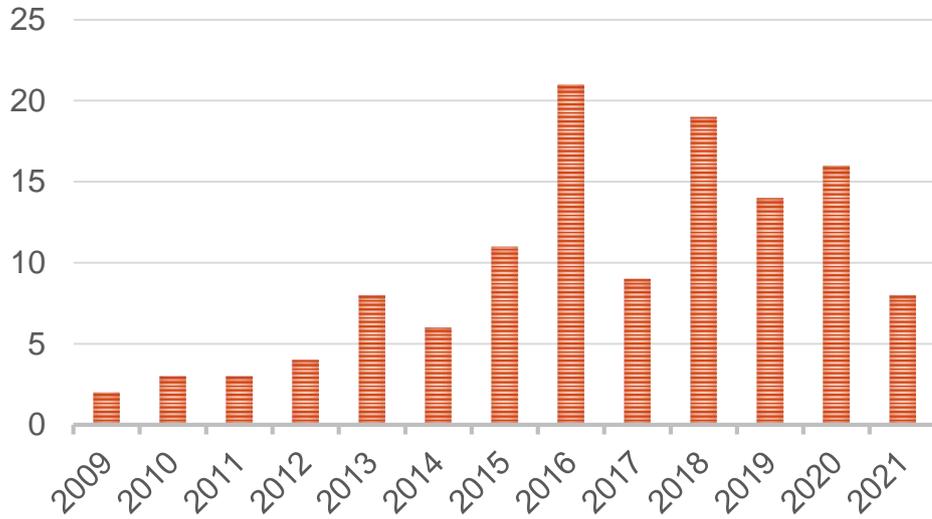
v1.0 (2012-05-23) Shoji et al., GRUAN Ground-based GNSS Site Guidelines, GRUAN-TD-6, [v1.0 \(2012-05-23\)](#).





Articles related to GRUAN

- With reference to one main GRUAN article or document
- Usage of GRUAN data



GRUAN Homepage / Documentation / Peer-reviewed articles

Peer-reviewed articles
GRUAN-related articles published in scientific journals

2021

- Grat et al. (2021), AMT
- Ingleby et al. (2021), AMT in review
- Jorge et al. (2021), AMT
- Lee et al. (2021), AMT in review
- Martucci et al. (2021), AMT
- Rosoldi et al. (2021), AMT in review
- Sun et al. (2021), RS
- von Rohden et al. (2021), AMT in review
- Becker et al. (2020), BAST
- Dirksen et al. (2020), GI
- Dupont et al. (2020), JTECH
- Evan et al. (2020), ACP
- Fassó et al. (2020), AMT
- Gierens et al. (2020), METZ
- Harananithu et al. (2020), ACP
- Hérón et al. (2020), ACP
- Madonna et al. (2020), AMT
- Madonna et al. (2020), ESSOJ in review
- Madonna et al. (2020), NC
- Newman et al. (2020), GRL
- Martinez et al. (2020), GRL
- Philpotts et al. (2020), METZ
- Stener et al. (2020), JC
- Sly et al. (2020), SMC
- Tradoviciu et al. (2017), JARC

Conference contributions

Other publications

FAQ

Page content

2021

- Grat et al. (2021), AMT
- Ingleby et al. (2021), AMT in review
- Jorge et al. (2021), AMT
- Lee et al. (2021), AMT in review
- Martucci et al. (2021), AMT
- Rosoldi et al. (2021), AMT in review
- Sun et al. (2021), RS
- von Rohden et al. (2021), AMT in review
- Becker et al. (2020), BAST
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- Dupont et al. (2020), JTECH
- Evan et al. (2020), ACP
- Fassó et al. (2020), AMT
- Gierens et al. (2020), METZ
- Harananithu et al. (2020), ACP
- Hérón et al. (2020), ACP
- Madonna et al. (2020), AMT
- Madonna et al. (2020), ESSOJ in review
- Madonna et al. (2020), NC
- Newman et al. (2020), GRL
- Martinez et al. (2020), GRL
- Philpotts et al. (2020), METZ
- Stener et al. (2020), JC
- Sly et al. (2020), SMC
- Tradoviciu et al. (2017), JARC

2020

- Becker et al. (2020), BAST
- Dirksen et al. (2020), GI
- Dupont et al. (2020), JTECH
- Evan et al. (2020), ACP
- Fassó et al. (2020), AMT
- Gierens et al. (2020), METZ
- Harananithu et al. (2020), ACP
- Hérón et al. (2020), ACP
- Madonna et al. (2020), AMT
- Madonna et al. (2020), ESSOJ in review
- Madonna et al. (2020), NC
- Newman et al. (2020), GRL
- Martinez et al. (2020), GRL
- Philpotts et al. (2020), METZ
- Stener et al. (2020), JC
- Sly et al. (2020), SMC
- Tradoviciu et al. (2017), JARC

2019

- Brunnemann et al. (2019), AMT

→ Please inform the Lead Centre about new papers





- Current news topics are
 - New articles, documents
 - Changes related to sites
 - Meetings
 - Data products
 - Other
- More would be possible
 - Campaigns, experiments
 - Other events, e.g. conferences

➔ Please inform the Lead Centre about news

News

Meetings ▾

Campaigns ▾

Awards ▾

✉ Contact

Month filter

- 2021
 - November 2021 (1 entry)
 - October 2021 (1 entry)
 - September 2021 (1 entry)
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 - April 2017 (1 entry)
 - March 2017 (1 entry)
- 2016

GRUAN News

News of network, community and related science

1 2 3 ... 7 »

Meeting | 2021-11-09
ICM-13: agenda available
Due to the global Covid-19 situation, this year's meeting will be organized as a condensed, virtual meeting in the week of 15-19 November 2021.

Article | 2021-10-25
AMT paper Rosoldi et al. 2021 in review
"Intercomparison of Vaisala RS92 and RS41 radiosonde temperature sensors under controlled laboratory conditions" by Rosoldi et al. The paper is open...

Article | 2021-09-29
AMT paper Lee et al. 2021 in review
"Radiation correction and uncertainty evaluation of RS41 temperature sensors by using an upper-air simulator" by Lee et al. The paper is open for...

Article Data product | 2021-07-20
AMT paper von Rohden et al. 2021 in review
"Laboratory characterisation of the radiation temperature error of radiosondes and its application to the GRUAN data processing for the Vaisala RS41"...

Station | 2021-07-20
Paramaribo (Suriname) first GRUAN site in South America
With the establishment of a new site in Paramaribo we have reached the landmark of the first GRUAN site on the South American continent. This is...

Article Measurement | 2021-07-13
AMT paper Ingleby et al. 2021 in review
The following GRUAN-relevant paper was published at AMT. "On the quality of RS41 radiosonde descent data" by Ingleby et al. The paper is open for...

Conference | 2021-05-20
ICM-13: virtual meeting 15-19 November 2021
In view of the ongoing Covid-19 situation, ICM-13 will again be organized as a virtual meeting.

Event Station | 2021-05-10
Lauder 60th
The GRUAN site Lauder (NZ) was founded 60 years ago.

Article | 2021-02-23
AMT paper Graf et al. 2021
The following GRUAN-relevant paper was published at AMT. "Compact and lightweight mid-infrared laser spectrometer for balloon-borne water vapor..."



- All GRUAN meetings since beginning
 - Presentations, documents, reports
 - Additional material, e.g. group photos



Meetings

Community meetings, workshops and relevant conferences

GRUAN Implementation-Coordination Meetings (ICM)

- 🔗 [ICM-13 \(Virtual 2021\)](#) 13th GRUAN Implementation-Coordination Meeting (ICM-13), Virtual, 15 November to 19 November 2021.
- 🔗 [ICM-12 \(Virtual 2020\)](#) 12th GRUAN Implementation-Coordination Meeting (ICM-12), Virtual, 16 November to 20 November 2020, [Report \(pdf\)](#).
- 🔗 [ICM-11 \(Singapore 2019\)](#) 11th GRUAN Implementation-Coordination Meeting (ICM-11), Singapore / SG, 20 May to 24 May 2019, [Report \(pdf\)](#).
- 🔗 [ICM-10 \(Potsdam 2018\)](#) 10th GRUAN Implementation-Coordination Meeting (ICM-10), Potsdam / DE, 23 April to 27 April 2018, [Report \(pdf\)](#).
- 🔗 [ICM-9 \(Helsinki 2017\)](#) 9th GRUAN Implementation-Coordination Meeting (ICM-9), Helsinki / FI, 12 June to 16 June 2017, [Report \(pdf\)](#).
- 🔗 [ICM-8 \(Boulder 2016\)](#) 8th GRUAN Implementation-Coordination Meeting (ICM-8), Boulder / US, 25 April to 29 April 2016.
- 🔗 [ICM-7 \(Matera 2015\)](#) 7th GRUAN Implementation-Coordination Meeting (ICM-7), Matera / IT, 23 February to 27 February 2015, [Report \(pdf\)](#).
- 🔗 [ICM-6 \(Greenbelt 2014\)](#) 6th GRUAN Implementation-Coordination Meeting (ICM-6), Greenbelt / US, 10 March to 14 March 2014, [Report \(pdf\)](#).
- 🔗 [ICM-5 \(De Bilt 2013\)](#) 5th GRUAN Implementation-Coordination Meeting (ICM-5), De Bilt / NL, 25 February to 01 March 2013, [Report \(pdf\)](#).
- 🔗 [ICM-4 \(Tokyo 2012\)](#) 4th GRUAN Implementation-Coordination Meeting (ICM-4), Tokyo / JP, 05 March to 09 March 2012, [Report \(pdf\)](#).
- 🔗 [ICM-3 \(Queenstown 2011\)](#) 3rd GRUAN Implementation-Coordination Meeting (ICM-3), Queenstown / NZ, 28 February to 4 March 2011, [Report \(pdf\)](#).
- 🔗 [ICM-2 \(Payerne 2010\)](#) 2nd GRUAN Implementation-Coordination Meeting (ICM-2), Payerne / CH, 2 to 4 March 2010, [Report \(pdf\)](#).
- 🔗 [ICM-1 \(Norman 2009\)](#) 1st GRUAN Implementation-Coordination Meeting (ICM-1), Norman / US, 2 to 4 March 2009, [Report \(pdf\)](#).
- 🔗 [IM \(Lindenberg 2008\)](#) Implementation Meeting of GCOS Reference Upper Air Network, Lindenberg / DE, 26 to 28 February 2008, [Report \(pdf\)](#).
- 🔗 [UAWS-2 \(Seattle 2006\)](#) GCOS/NOAA Upper-Air Workshop II, Seattle / US, 22 to 24 May 2006.
- 🔗 [UAWS-1 \(Boulder 2005\)](#) NOAA/GCOS Workshop to Define Climate Requirements for Upper-Air Observations, Boulder / US, 8 to 11 February 2005.

Workshops

- NEW (Fürstenwalde 2012) The GRUAN Workshop to Develop Network Design and Expansion Criteria, Fürstenwalde / DE, 13-15 June 2012, [Report \(GRUAN-RP-4\)](#).

- Available since 5 years → <https://www.gruan.org>
- Comprehensive information → Data, documents, papers, news, meetings
- More content needed → e.g. section instruments
- Website of whole GRUAN community
→ Contributions are very welcome

Please give feedback and contribute!
gruan.lc@dwd.de