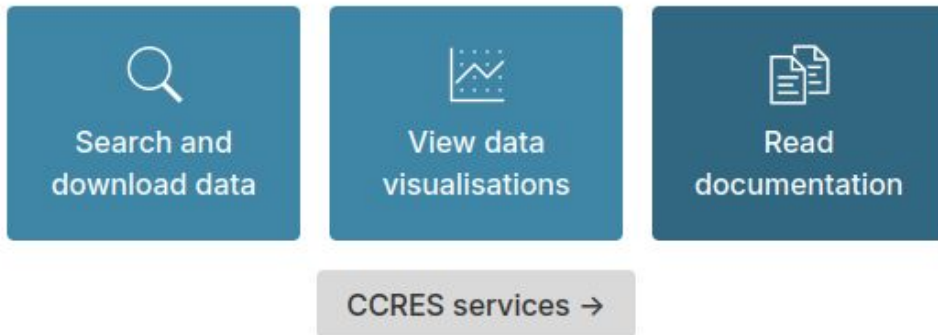




Welcome to ACTRIS Cloudnet data portal

The ACTRIS Cloudnet data portal provides a data processing and curation service for ground-based cloud remote sensing measurements. This includes centralised processing, quality control, provenance, data harmonisation and archiving.

The data portal is developed by the Cloud Remote Sensing Data Centre Unit (CLU) as part of the [ACTRIS research infrastructure](#), and is hosted at the [Finnish Meteorological Institute](#).



CCRES Workshop CLU updates May 2025

CCRES Workshop, 19 May, 2025

CLU updates

Attenuation corrections



Location

Hyytiälä

Show all sites

Date

2024-04-28

Product

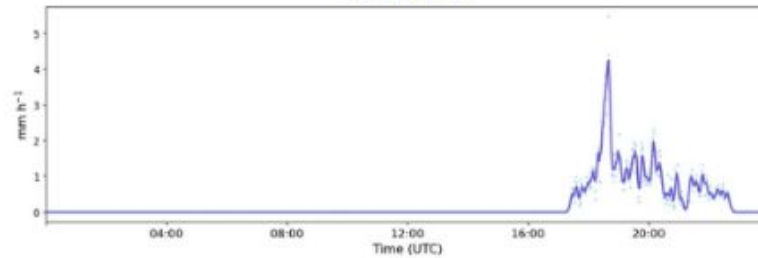
Disdrometer
Radar
Microwave radiometer
Lidar

Visualisations for 28 April 2024

Hyytiälä Parsivel2 disdrometer

Volatile

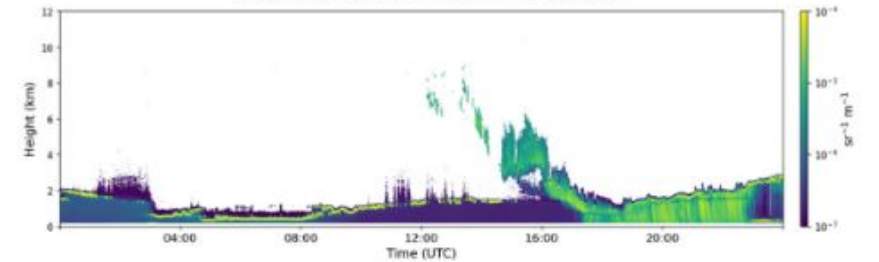
Rainfall rate



Hyytiälä CL61 ceilometer

Volatile

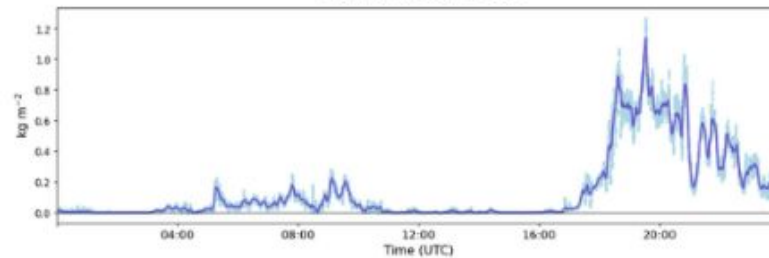
Attenuated backscatter coefficient



Hyytiälä HATPRO microwave radiometer

Volatile

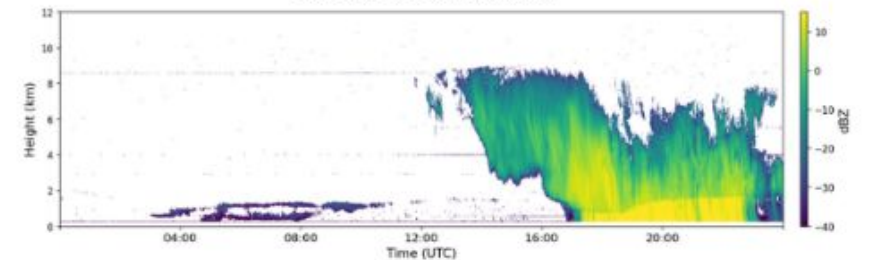
Liquid water path



Hyytiälä RPG-FMCW-94 cloud radar

Volatile

Radar reflectivity factor



CLU updates

Attenuation corrections



Location

Hyytiälä

Show all sites

Date

2024-04-28

Product

Classification

Ice water content

Show experimental products

Instrument model

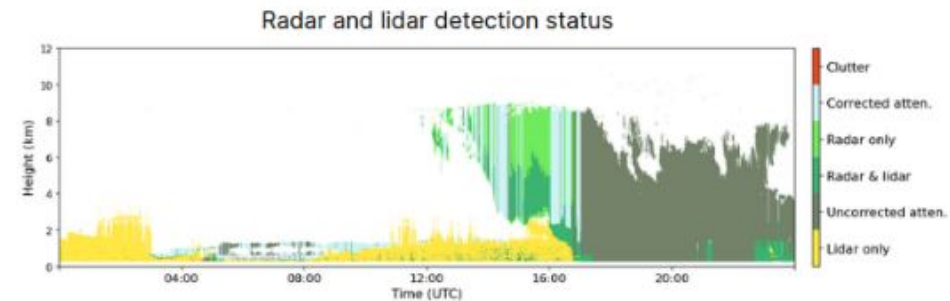
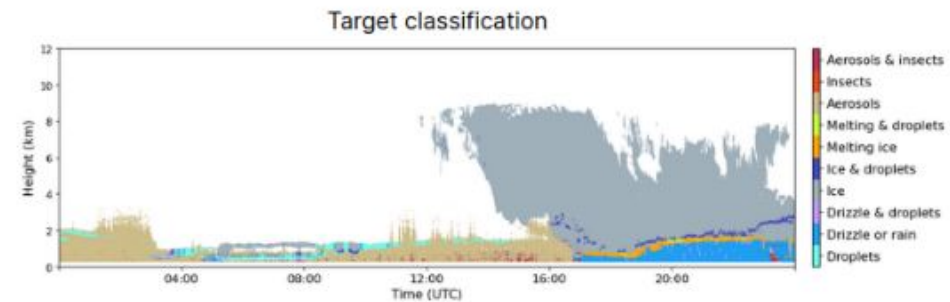
Select

Variable

Visualisations for 28 April 2024

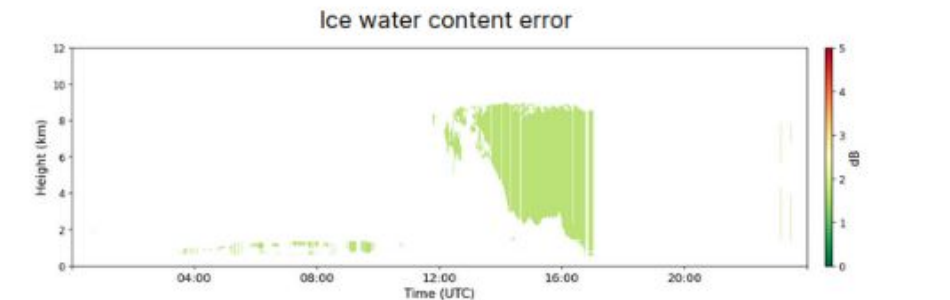
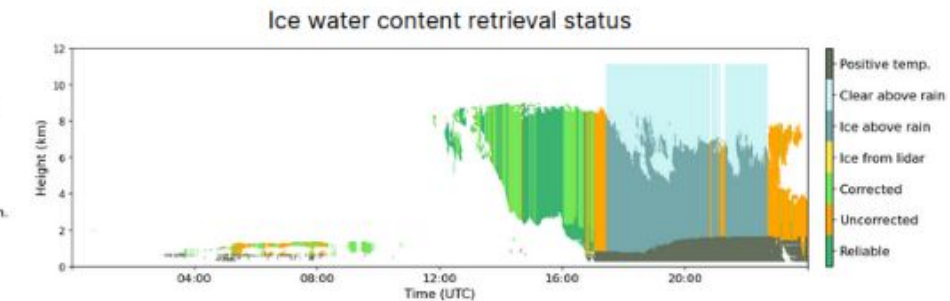
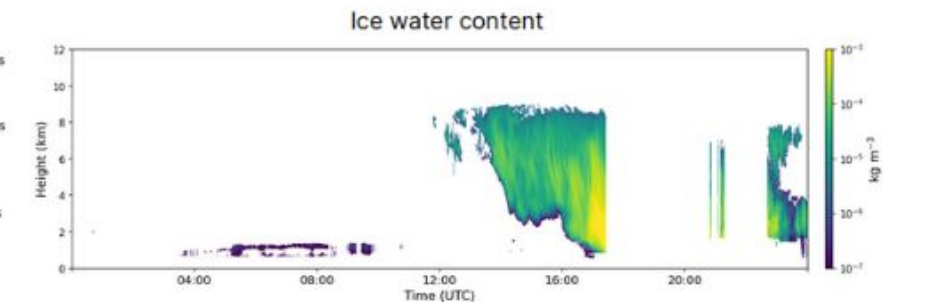
Hyytiälä Classification

Volatile



Hyytiälä Ice water content

Volatile

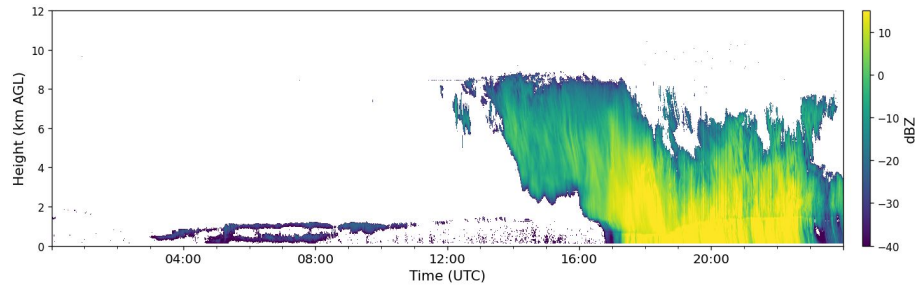


comparison view

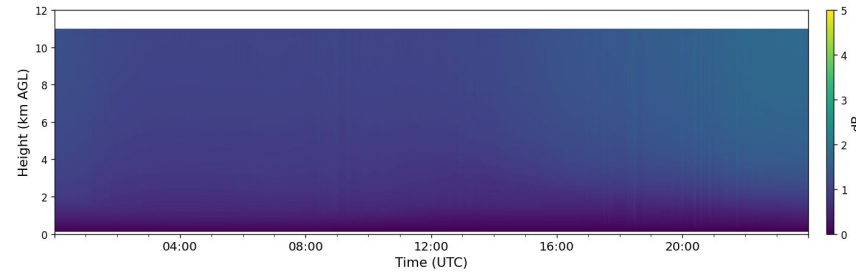
CLU updates

Attenuation corrections

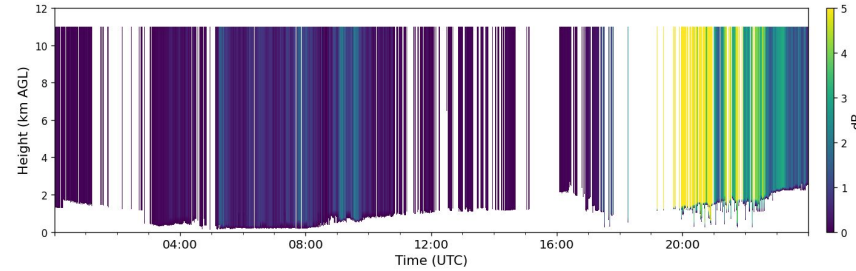
Cloudnet radar data is corrected for **gas** and **liquid water** attenuation. Now, we have initial implementation for **rain** and **melting layer** attenuation.



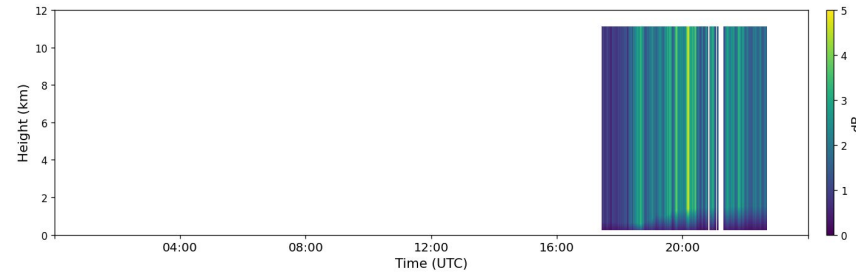
Hyytiälä 2024-04-28



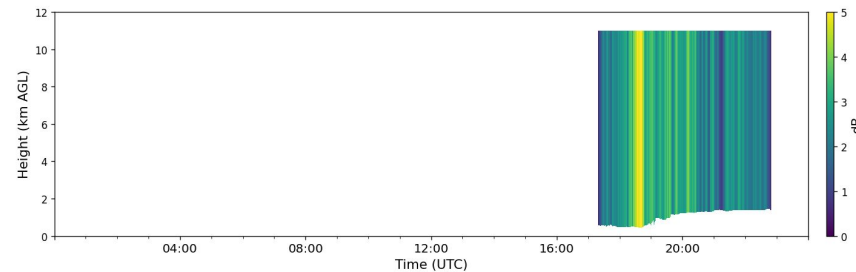
gas



liquid



rain



melting
layer

CLU updates

Attenuation corrections



Location

Hyytiälä

Show all sites

Date

2024-04-28

Product

Classification

Ice water content

Show experimental products

Instrument model

Select

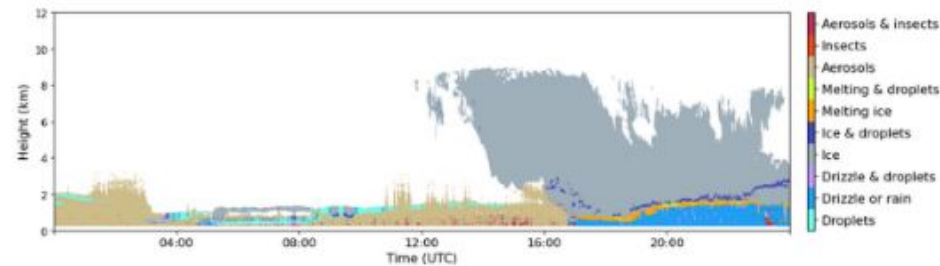
Variable

Visualisations for 28 April 2024

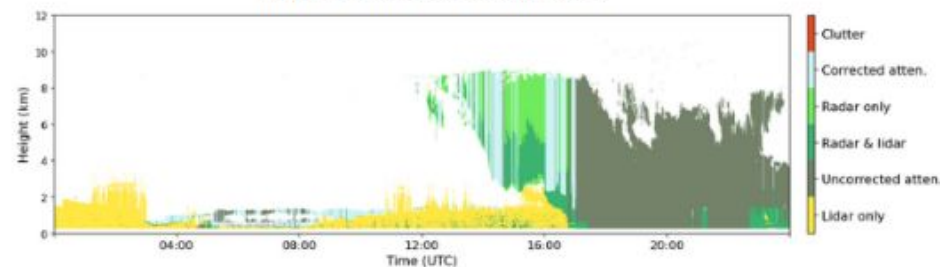
Hyytiälä Classification

Volatile

Target classification



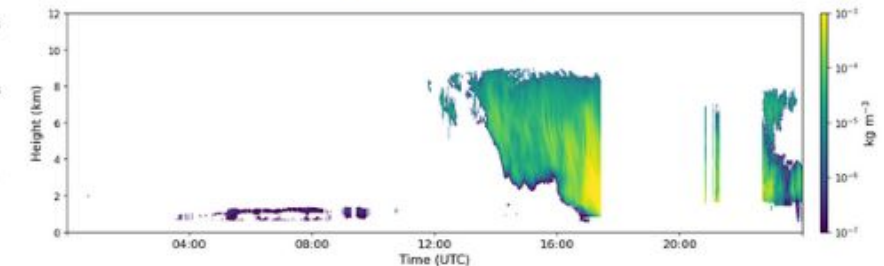
Radar and lidar detection status



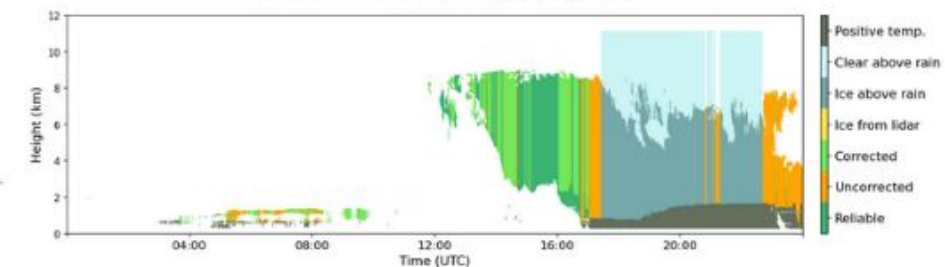
Hyytiälä Ice water content

Volatile

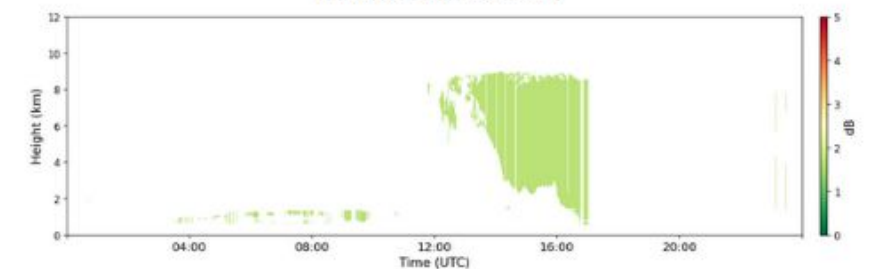
Ice water content



Ice water content retrieval status



Ice water content error



comparison view

CLU updates

Attenuation corrections



Location

Hyytiälä x

☐ Show all sites

Date

2024-04-28

Product

Classification x

Ice water content x

☐ Show experimental products

Instrument model

Select

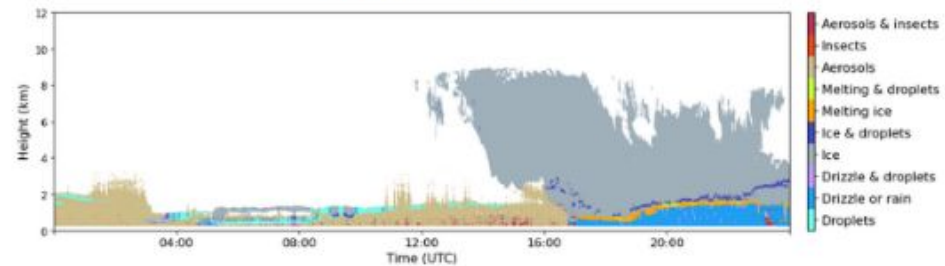
Variable

Visualisations for 28 April 2024

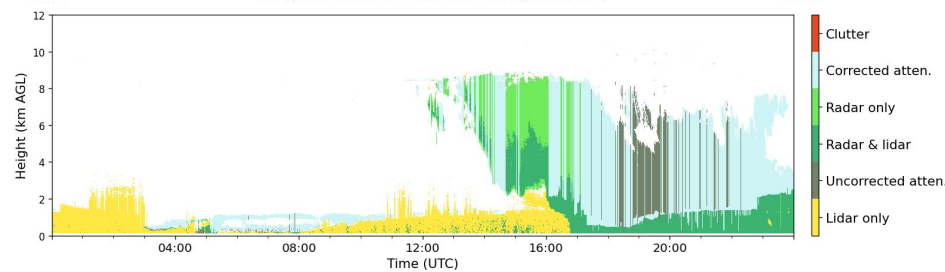
Hyytiälä Classification

Volatile

Target classification



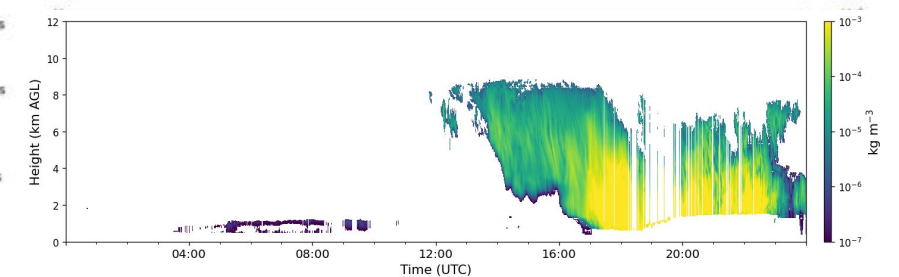
Radar and lidar detection status



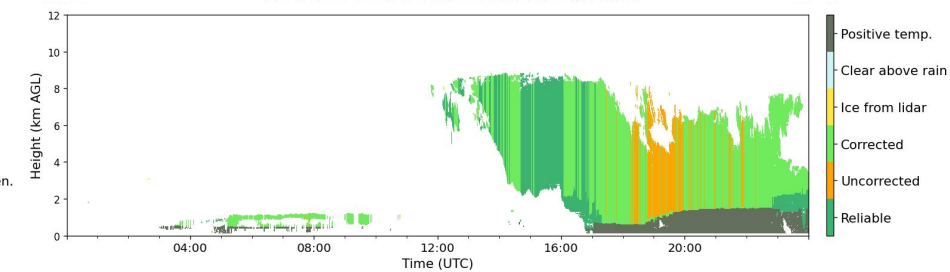
Hyytiälä Ice water content

Volatile

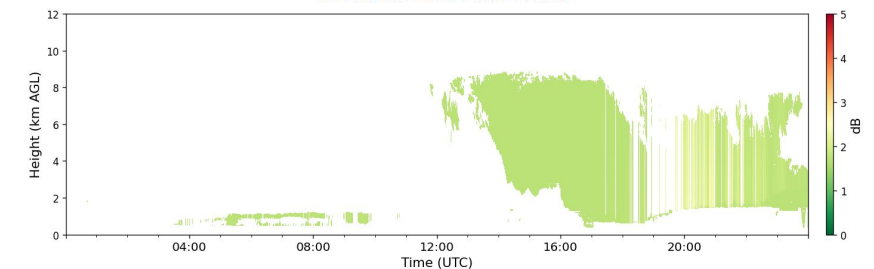
Ice water content



Ice water content retrieval status



Ice water content error

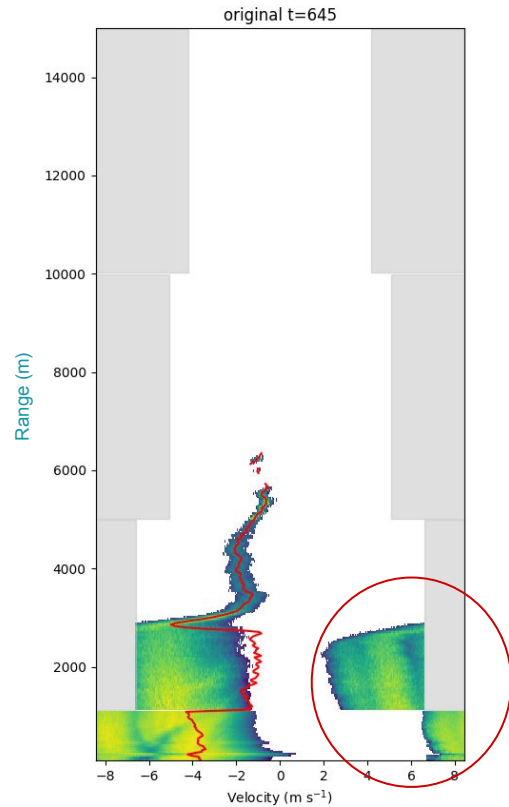


comparison view

CLU updates Velocity unfolding

RPG-FMCW-94

Doppler spectra with mean velocity



folding!

Chirp 4: $v_{ny} = 4.1 \text{ m s}^{-1}$

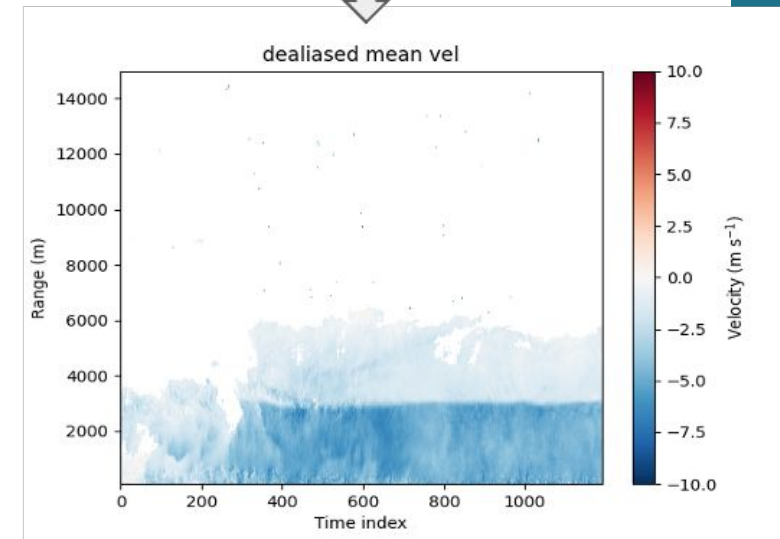
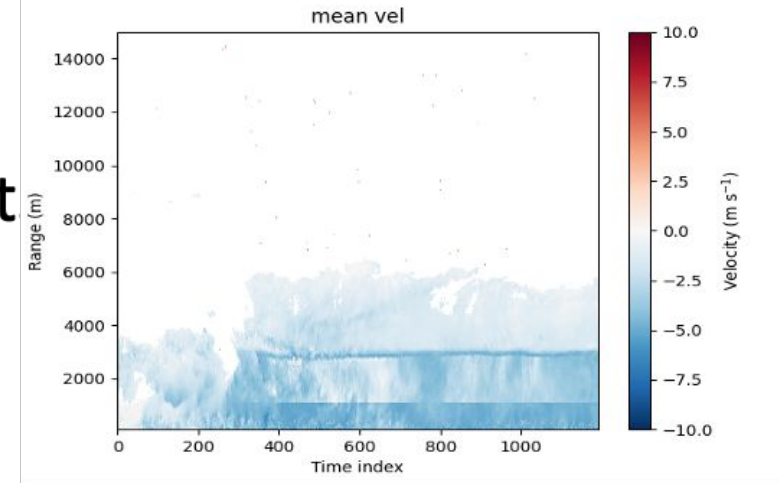
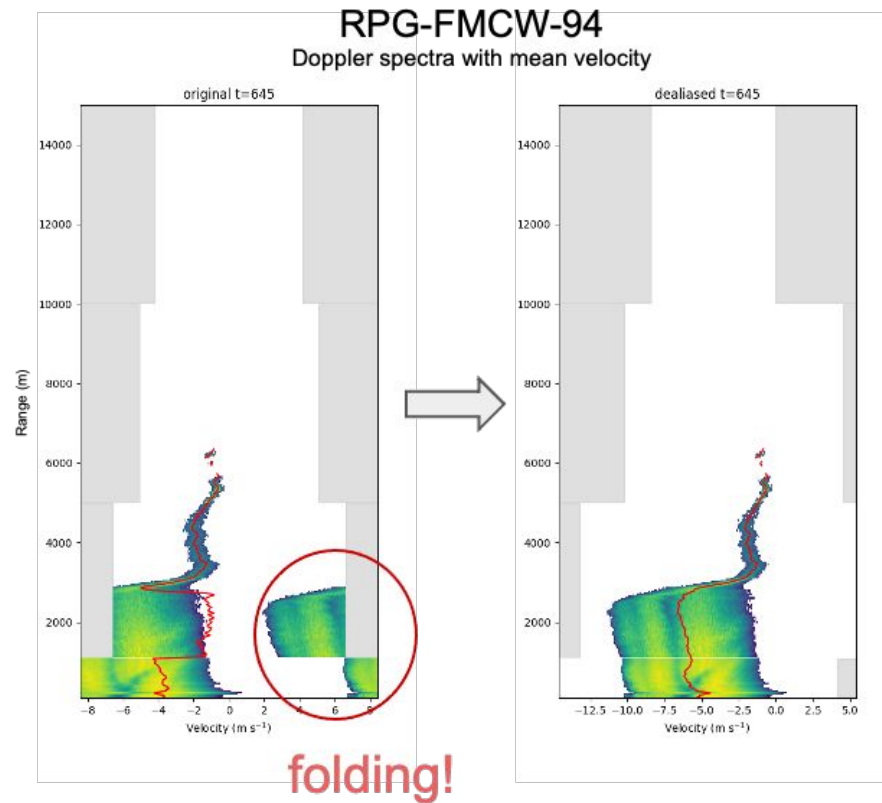
Chirp 3: $v_{ny} = 4.9 \text{ m s}^{-1}$

Chirp 2: $v_{ny} = 6.1 \text{ m s}^{-1}$

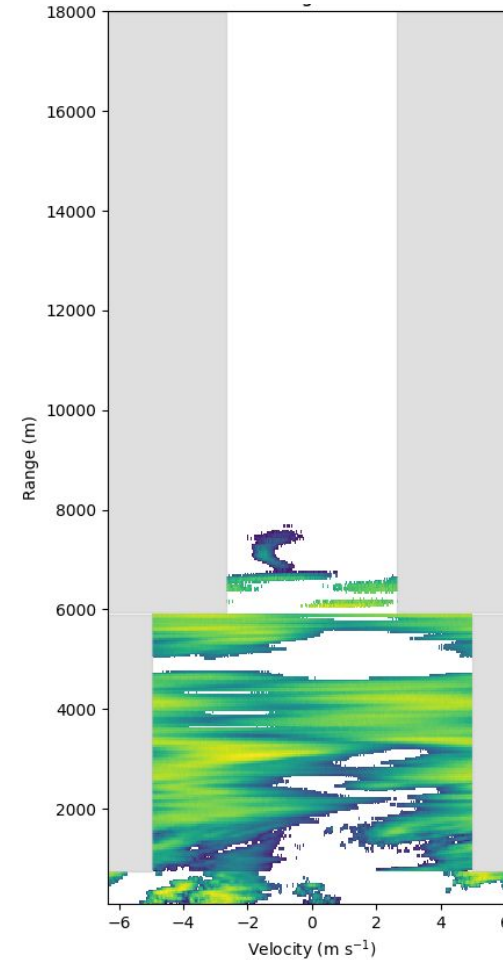
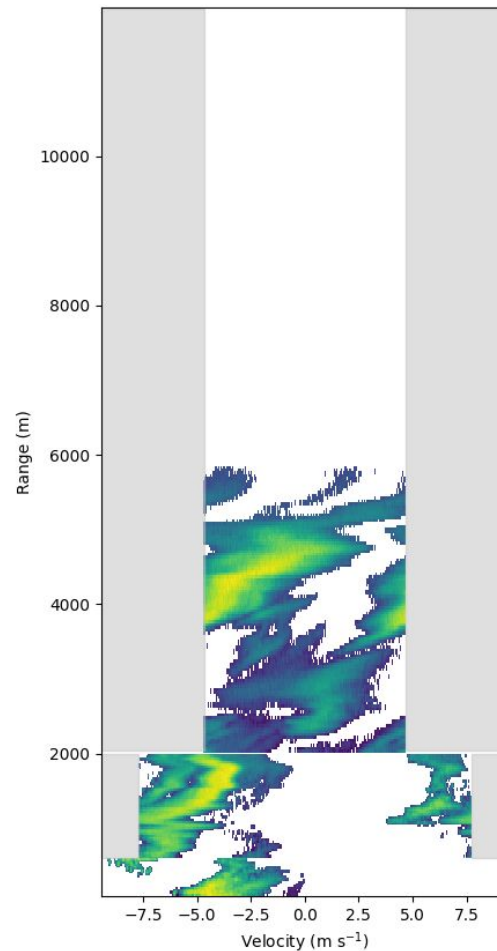
Chirp 1: $v_{ny} = 8.4 \text{ m s}^{-1}$

CLU updates Velocity unfolding

Folding in ground-based measurement



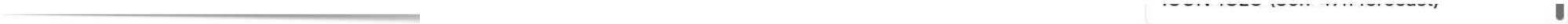
Folding: tricky cases



Next steps

- Implement operational dealiasing method for ground-based radar measurements – with status flags
- Validate attenuation corrections, including radome
- Need to evaluate at stations with multi-frequency radar
 - Will ask for volunteers!

Not all fields, low resolution



Instrument log book

Instruments

Logbook Edit JSON XML Log out

FMI CL61-B


PID

<https://hdl.handle.net/21.12132/3.f33e53dddde44495>

OWNER

Finnish Meteorological Institute (FMI) 

MANUFACTURER

Vaisala Oyj 

MODEL

Vaisala CL61

INSTRUMENT TYPE

depolarisation lidar ceilometer

MEASURED VARIABLES

- volume linear depolarisation ratio
- attenuated backscatter coefficient

LOCATION

2021-07-14 – now Kenttäröva

PRINCIPAL INVESTIGATOR

2021-07-14 – now Ewan O'Connor



SERIAL NUMBER

T2520357

CITATION

O'Connor, E. (2025). FMI CL61-B. ACTRIS Cloud remote sensing data centre unit (CLU). <https://hdl.handle.net/21.12132/3.f33e53dddde44495>

If you notice any incorrect or outdated information, please send email to actris-cloudnet@fmi.fi.

InstrumentDB 1.3.1



Photo: Niko Leskinen,
2023

Instruments » FMI CL61-B

Add entry Log out

Logbook

Dec. 19, 2024 – viet

[edit](#) [delete](#)

Calibration hood: Henri

Date on: 2024-12-18

Time on: 12:12 UTC (14:12 EEST)

Date off: 2024-12-19

Time off: 09:27 UTC (11:27 EEST)

Aug. 14, 2024 – ewan

[edit](#) [delete](#)

Calibration hood: Eija Asmi

Date on: 2024-08-14

Time on: 11:34 UTC (14:34 EEST)

Date off: 2024-08-14

Time off: 12:41 UTC (15:41 EEST)

July 25, 2024 – ewan

[edit](#) [delete](#)

Lightning strike hit the tower on 25th July 2024.

June 14, 2024 – niko

[edit](#) [delete](#)

Hat calibration (German):

Hat on: 2024-06-14 11.47 UTC (14.47 EEST)

Hat off: 2024-06-14 14.50 UTC (17.50 EEST)

March 5, 2024 – niko

[edit](#) [delete](#)

Hat calibration (in colder temperature)

Hat on: 2024-03-05 13.10 UTC (15.10 EET)

Hat off: 2024-03-06 10.43 UTC (12.43 EET)

March 4, 2024 – niko

[edit](#) [delete](#)

Hat calibration:

CLU updates

- Client library written in Python

README

MIT license

Run tests

passing

pypi package

0.5.1

Cloudnet API client

Official Python client for the [Cloudnet data portal API](#).

Installation

```
python3 -m pip install cloudnet-api-client
```

Quickstart

```
from cloudnet_api_client import APIClient

client = APIClient()

sites = client.sites(type="cloudnet")
products = client.products()

metadata = client.metadata("hyytiala", "2021-01-01", product=["mwr", "radar"])
client.download(metadata, "data/")

raw_metadata = client.raw_metadata("granada", date="2024-01", instrument_id="parsivel")
client.download(raw_metadata, "data_raw/")
```

Documentation

APIClient().metadata() and raw_metadata() → list[Metadata]

Fetch product and raw file metadata from the Cloudnet data portal.

Parameters:

+ 10 releases

Contributor

tukiain

siiptuo

Languages

Python 100

README

MIT license

Documentation

APIClient().metadata() and raw_metadata() → list[Metadata]

Fetch product and raw file metadata from the Cloudnet data portal.

Parameters:

name	type	default	example
site_id	str		"hyytiala"
date	str OR date	None	"2024-01-01"
date_from	str OR date	None	"2025-01-01"
date_to	str OR date	None	"2025-01-01"
updated_at	str, date OR datetime	None	"2025-01-01T12:00:00"
updated_at_from	str, date OR datetime	None	"2025-01-01T12:00:00"
updated_at_to	str, date OR datetime	None	"2025-01-01T12:00:00"
instrument_id	str OR list[str]	None	"rpg-fmcw-94"
instrument_pid	str OR list[str]	None	https://hdl.handle.net/21.12132/3.191564170f8a4686
product*	str OR list[str]	None	"classification"
show_legacy*	bool	False	
filename_prefix**	str OR list[str]	None	"stare"
filename_suffix**	str OR list[str]	None	".lv1"
status**	str OR list[str]	None	"created", "uploaded", "processed" or "invalid"

* = only in .metadata()

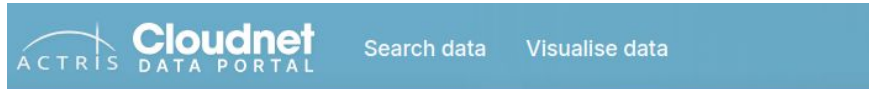
CLU updates

- Client library written in Python
- Data coverage in JSON metadata - for help in labelling process

JSON		Raw Data	Headers
Save		Copy	Collapse All Expand All Filter JSON
uuid:	"a871bac7-7c86-44ea-985c-4d3ddd396f3a"		
version:	""		
pid:	"https://hdl.handle.net/21.12132/1.a871bac77c8644ea"		
dvasId:	null		
volatile:	true		
tombstoneReason:	null		
legacy:	false		
measurementDate:	"2025-04-09"		
▼ checksum:	"8d1cb5c8732ccdbf008983fbc3367d0eddbc086aee7e76a6b005f3536212cb88"		
size:	"9515893"		
coverage:	0.85520834		
format:	"HDF5 (H5CDF4)"		
errorLevel:	"info"		
createdAt:	"2025-04-09T01:25:19.623Z"		
updatedAt:	"2025-04-10T04:57:55.413Z"		
dvasUpdatedAt:	null		
startTime:	"2025-04-09T00:00:15.000Z"		
stopTime:	"2025-04-09T23:59:44.000Z"		
instrumentPid:	null		
▼ site:			

CLU updates

- New stations



Maïdo Observatory

ACTRIS

Cloudnet

Measurement station in Réunion

[Summary](#)

The Maïdo Observatory is located on a 2200-meter-high su Réunion island, inside a national park. It is under the direct i ing from the west-northwest downhill slope, partially coverec

Instruments

The site has submitted data from the following instruments ir

LACy BASTA Doppler non-scanning cloud radar

OSU CS135 lidar ceilometer

OSU HATPRO-G5 scanning microwave radiometer

Links

- La Réunion - Maïdo atmospheric observatory in ACTRIS da
- OPAR Observatoire de Physique de l'Atmosphère à La I database
- RUN in GAW Station Information System



Search data

Visualise data

Documentation

Sites

Instruments

Troll Station

Campaign

Measurement station in Antarctica

[Summary](#)

[Products](#)

Troll research station in Jutulsessen in Antarctica is the base and starting point for biological, glaciological and geological field work during the summer season, and is a full-year base for continuous, long-term monitoring series in meteorology, radiation, atmosphere, upper atmosphere, environmental toxins and seismology.

Troll is located around 235 km from the coast in Dronning Maud Land, a central area for Norwegian research in Antarctica. It is unusually located on the slope between the coast and the interior plateau.

The station is manned year round. It can accommodate six people in the Antarctic winter and many more in summer.

Intensive cloud monitoring at the station started in the southern summer 2024–25. Other atmospheric monitoring goes back many years.

Instruments

The site has submitted data from the following instruments in the last 30 days:

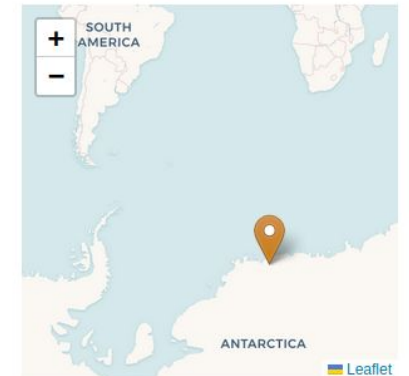
NPI CL61 depolarisation lidar ceilometer

NPI LHATPRO-G5 microwave radiometer

NPI RPG-FMCW-35-DP Doppler non-scanning cloud radar

Links

- Troll in ACTRIS data portal



Coordinates
72.01°S, 2.545°E

Altitude
1320 m a.s.l.

actris-cloudnet@fmi.fi
GitHub organization

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Privacy policy
Service status

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Privacy policy
Service status