



Communication to
**Cloud Remote Sensing
National Facilities**

- April 2025 -

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1. CCRES/CLU Workshops, Training and Consultancy

CCRES/CLU Workshops

Next CCRES/CLU workshop will take place **online on May 19 and May 20** (9am to 12pm CEST each day). Registrations are still open at [this link](#) and more information will be displayed on [ACTRIS CCRES website](#). A **preliminary agenda** is available at the same link.

We strongly encourage presentations of **new technical or scientific developments** from the community.

In case of any question, please contact Elisa Villard (evillard@ipsl.fr).

CCRES/CLU Training school in September 2025

A CCRES/CLU training school will take place **from 8 to 12 September 2025, hosted at the Ludwig-Maximilians University in Munich, Germany**. Registrations are now closed and a preliminary program has been sent to the participants.

time		MONDAY 01.09	TUESDAY 02.09	WEDNESDAY 03.09		THURSDAY 04.09		FRIDAY 05.09		
09:00	09:30		Welcome session	Lecture : Visualization and interpretation of radar Doppler spectra <i>S. Kneifel (LMU)</i>		Lecture : Microphysical properties of liquid and ice clouds by means of dual Fov lidar and lidar/radar synergy <i>C. Jimenez (TROPOS)</i>		Lecture: EarthCARE Cal/Val <i>L. Pfitzenmaier</i>		
09:30	10:30		Lecture : Intrduction to DCR remote sensing							
10:30	11:00		BREAK							
11:00	12:30		Lecture : Microwave radiometry <i>CCRES DE</i>	Lecture/hands-on: CloudNet products <i>CLU</i>	Lecture : Doppler Lidar/doppler DCR <i>CCRES-FI</i>	Lecture/hands on : ABL height retrieval <i>S. Kotthaus</i>				
12:30	14:00		LUNCH							
14:00	15:30		Hands-on : MWR calibration <i>CCRES DE</i>	Hands-on : DCR calibration <i>CCRES FR / LMU</i>	Hands-on : Cloud radar doppler spectra analysis with peako and peaktree <i>M. Radenz (TROPOS)</i>	Hands-on : HKD monitoring/ReOBS <i>CCRES-FR</i>	Hands-on : Disdrometer calibration <i>DD WG</i>	Hands-on : Doppler Lidar processing <i>CCRES-FI</i>	Hands-on : Ceilometer dark current measurements <i>CARS</i>	
15:30	16:00		BREAK						Closing session	
16:00	17:30	Travel	Hands-on : DCR calibration <i>CCRES FR / LMU</i>	Hands-on : MWR calibration <i>CCRES DE</i>	Hands-on : HKD monitoring/ReOBS <i>CCRES-FR</i>	Hands-on : Cloud radar doppler spectra analysis with peako and peaktree <i>M. Radenz (TROPOS)</i>	Hands-on : Doppler Lidar processing <i>CCRES-FI</i>	Hands-on : Disdrometer calibration <i>DD WG</i>	Travel	
17:30	18:00		Wrap-up session							
18:00	19:00									
19:00	20:00						SOCIAL DINNER			

Preliminary program for CCRES/CLU Training School, September 2 to 5, 2025, in Munich (Ludwig-Maximilians-Universität)

In case of any question, please contact Elisa Villard (evillard@ipsl.fr).

RPG DCR data processing and operation support training

An **RPG cloud radar training session**, dedicated to **chirp table programs**, was organised by CCRES-NL on March 5. About 35 participants attended. A report on the Chirp table prepared by Christine Unal and Rob Mackenzie has been sent to all the participants prior to the training. The report can be found at <https://ccres.ipsl.fr/docs/sops/index.html>. A good chirp table -4 sequences for vertical profiling were built interactively with all the participants. Questions and queries about the chirp table from the participants were discussed during the training.

For more information, please contact Renju Nandan (R.Nandan@tudelft.nl).

2. CCRES Operational Services for NFs

Cloud radar calibration campaigns

To ensure **a high level of quality** across the network, CCRES performs **cloud radar calibration transfers** at each National Facilities site. To achieve this, CCRES-FR travels to the NFs with the BASTA-CCRES reference cloud radar and conducts **measurement campaigns** lasting approximately two months.

In January 2025, the **CCRES reference cloud radar** (94 GHz BASTA) was installed by the CCRES-FR team at the LACROS station in Leipzig, Germany, to operate alongside the local radars of the LACROS (RPG 94 and Metek MIRA 35) and Melpitz (RPG 94 and Metek MIRA 35) stations for 2 months. As the campaign has just ended, analysis of the results are still on-going and will be available in the coming weeks.



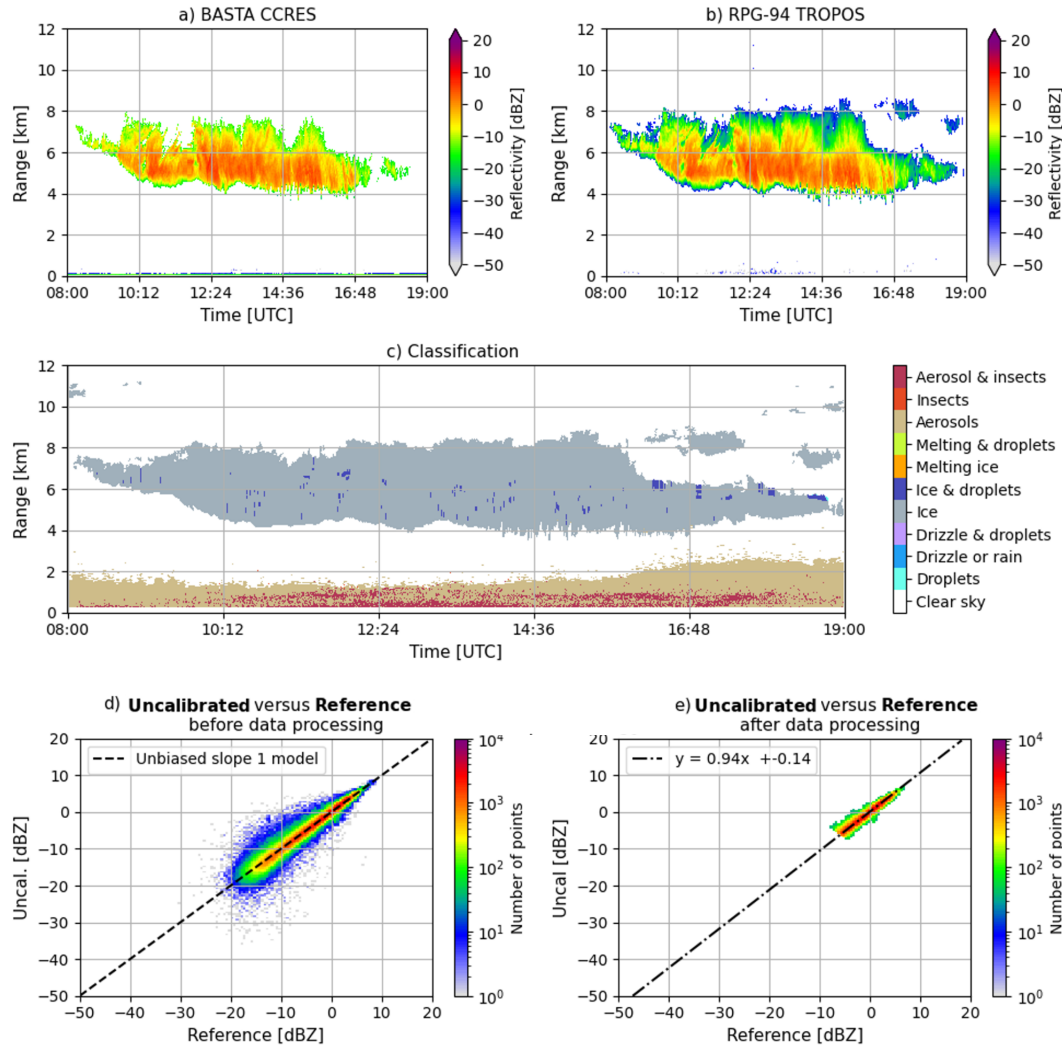
From left to right : Jean-Charles Dupont (CCRES-FR), Patric Seifert (LACROS station), Jean-François Ribaud (CCRES-FR), with mobile reference BASTA Doppler Cloud Radar in front.

Data from the Leipzig campaign (RACE-LE for Radar Cloud Experiment at Leipzig) are currently being analyzed to calibrate the four cloud radars installed near the BASTA reference radar. About ten **interesting cloud situations have been selected**, and we are currently optimizing the processing to **determine the calibration constants of the four cloud radars**. This work should be completed within a few weeks, and we will deliver one **calibration certificate for each radar**, detailing (1) the calibration constant and (2) the associated uncertainty.

The figure below shows an example of an interesting situation (February 22, 2025) where an ice cloud (CLOUDNET classification) persists between 08:00 and 19:00 UT (figure (c)). We can then see the reflectivity profiles of the reference radar (a) and the radar to be calibrated (b). The interest of the algorithm developed within the CCRES is then clearly visible by comparing figures (d): before processing, and (e): after processing.

This method will be applied to all other cloud situations and for all cloud radars to be calibrated.

For more information, please contact Jean-Charles Dupont (jean-charles.dupont@ipsl.fr), Jean-François Ribaud (jean-francois.ribaud@ipsl.fr), Felipe Toledo (felipe.toledo@latmos.ipsl.fr) and Maëlle Bombled (maelle.bombled@ipsl.fr) from CCRES-FR.



Preliminary results for 22nd of February 2025 between 08:00 and 19:00UTC at LEIPZIG, (a) Vertical profiles of reflectivity measured by CCRES reference radar, (b) vertical profile of reflectivity measured by the RPG-94 TROPOS cloud radar, (c) classification derived by cloudnet algorithm, (d) raw uncalibrated reflectivity versus reference reflectivity, and (e) processed uncalibrated reflectivity versus reference reflectivity (thanks to Maëlle Bombled for the figure)

In mid-March, CCRES-FR team returned to Leipzig to uninstall the CCRES reference radar and transfer it to Lindenberg, with much appreciated support from LACROS team. A second campaign then began in Lindenberg, with the aim of **calibrating three radars**: Lindenberg MOL-RAO's RPG 94 and Metek MIRA 35, and Rzecin station's (Poland) 94 GHz BASTA that was moved to Lindenberg by the instrument PI for the occasion.



Installation of CCRES reference radar (left) and Rzecin radar (right) in Lindenberg.

Further analysis will enable CCRES to **detect the biases of radars at both locations relative to the CCRES reference radar**, and to prepare official calibration reports.

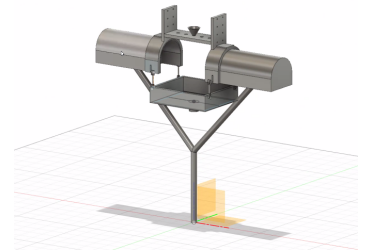
In Autumn 2025, a calibration campaign is foreseen to take place at the AGORA station (Granada, Spain). In 2026, CCRES will organise the radar calibration of the three Romanian stations of ACTRIS network (RADO-Bucharest, RADO-Galati, RADO-Cluj).

Statistical analysis has been conducted to determine the **optimal period** of the year to calibrate cloud radars at each site.

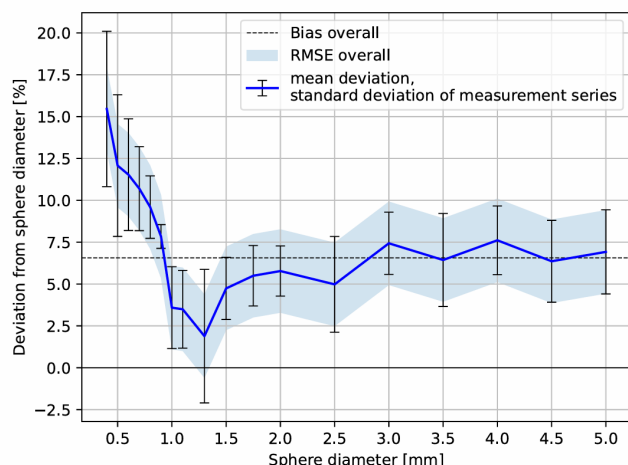
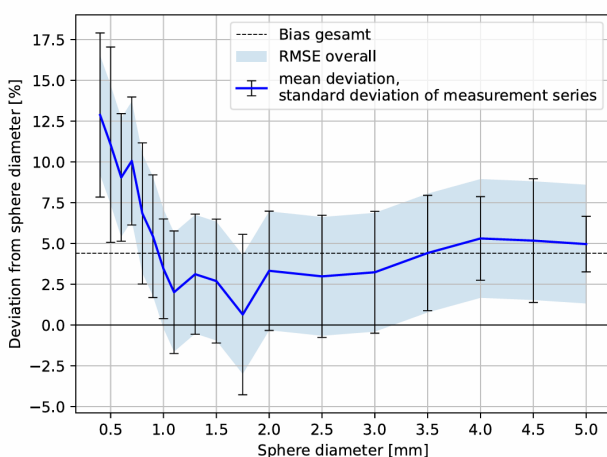
In case of any question, please contact Elisa Villard (evillard@ipsl.fr).

Disdrometer calibration procedure in progress

Stefan Kneifel and Jonathan Roßmanith from the Ludwig-Maximilians University (LMU) developed a device and procedure to perform **disdrometer calibration** using either steel or plastic spheres. CCRES-FR together with Dmitri Moisseev from the University of Helsinki and Marc Schleiss from TU-Delft joined the LMU team to further investigate the replicability of the **disdrometer calibration method and evaluate how this could be deployed at CRS stations**. Until now, the procedure has been tested in Cabauw and planned to be replicated at SIRTa in May. For this purpose, necessary elements for the installation of the device have been either purchased or 3D printed.



A showcase of the method is planned to be presented by the dedicated working group during our Spring workshop, and **specific hands-on training** will be provided in Munich during CCRES/CLU training school in September. First results of Cabauw tests are displayed below showing the **deviation between sphere diameter measured by the disdrometer and the known steel sphere diameter**.



Results of tests conducted at Cabauw NF (Jonathan Roßmanith and Stefan Kneifel, LMU)

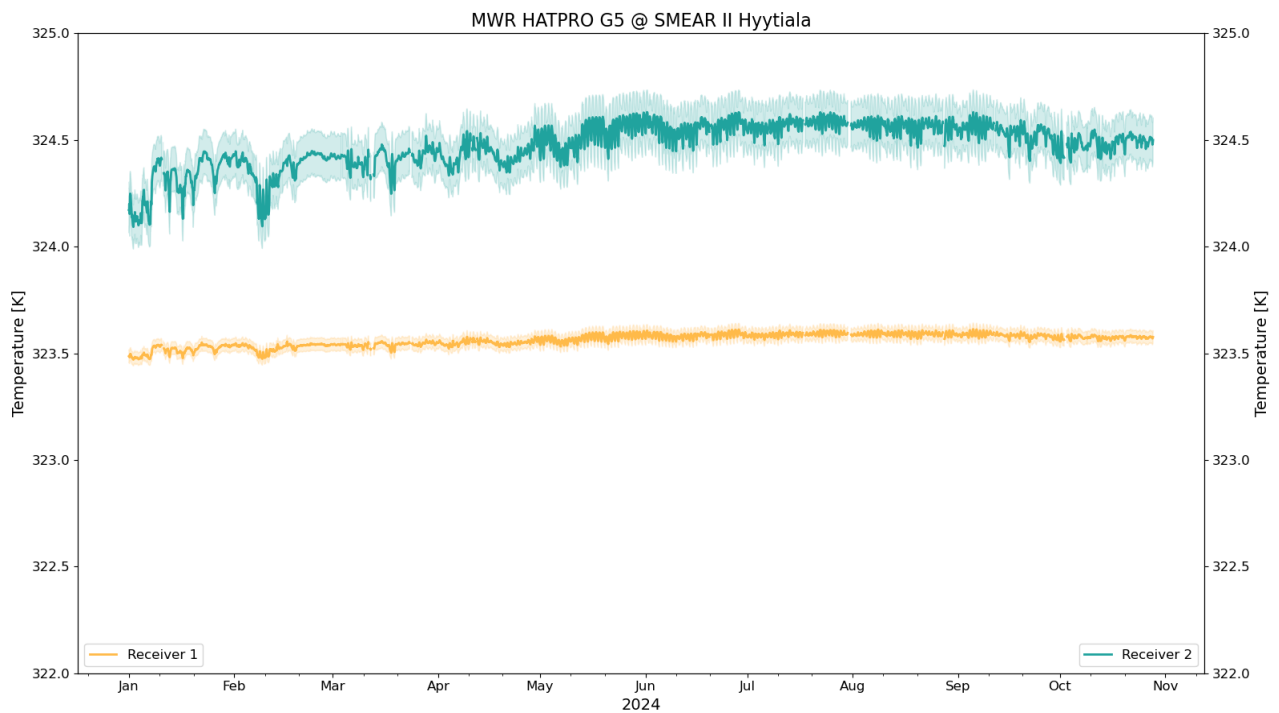
A collaboration with **disdrometer manufacturers** is foreseen as well.

If you would like to join the working group on this topic, please contact Elisa Villard (evillard@ipsl.fr).

Microwave radiometer stability monitoring

Monitoring long-term trends in MWR receiver temperatures and stability (defined as the temporal variability of receiver temperature values) can give valuable information on data quality and instrument status. A **critical receiver temperature stability threshold of 0.05 K** (adapted from the manufacturer RPG) is also used as a quality flag in the MWRpy processing software. **CCRES now provides visualizations** of those quantities on a yearly basis:

<https://ccres.aeris-data.fr/en/data-visualization-mwr/>

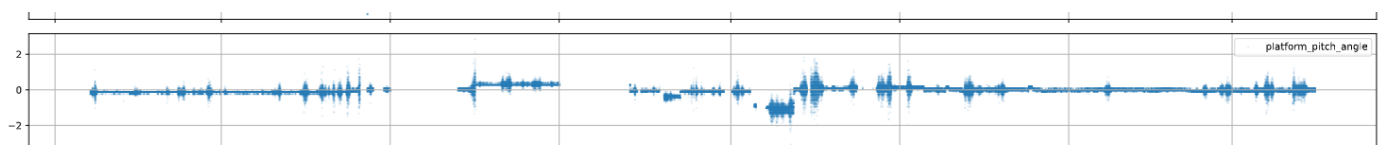


In case of any question, please contact Tobias Marke from CCRES-DE (tobias.marke@uni-koeln.de).

Doppler lidar stability monitoring

CCRES is now monitoring the **long-term trends in internal temperature and relative humidity, supply voltage, and the platform pitch and roll**. The **internal temperature** is required for improving near-range background correction, **relative humidity** values indicate potential lens fogging, and the **supply voltage** should be monitored to ensure nominal amplifier operation for certain instrument types.

Housekeeping data is already stored in Influx DB and monitoring pages are being designed.





CLU is requesting the **system parameters file** (system_parameters_*.txt) from all Halo systems to aid in monitoring system stability (is also provided as additional housekeeping data for the housekeeping data monitoring service). Housekeeping data for Windcube systems is contained within the netcdf data file.

In case of any question, please contact Ewan O'Connor from CCRES-FI (Ewan.Oconnor@fmi.fi).

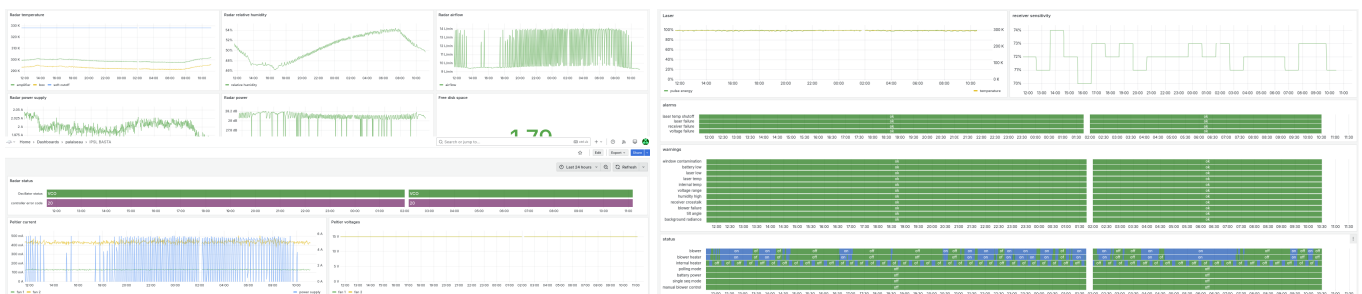
Housekeeping Data Monitoring

Several updates have been made on CCRES grafana (<https://ccres.ipsl.fr/grafana/>).

New monitoring dashboards are now available for several instruments:

- **Radar**
 - Basta
- **ALC**
 - Vaisala ct25k, cl3l, cl5l and cl6l
 - Campbell Scientific CS135

Dashboards of the RPG HATPRO have been fixed to correct a mismatch between status of temperature and humidity receivers.

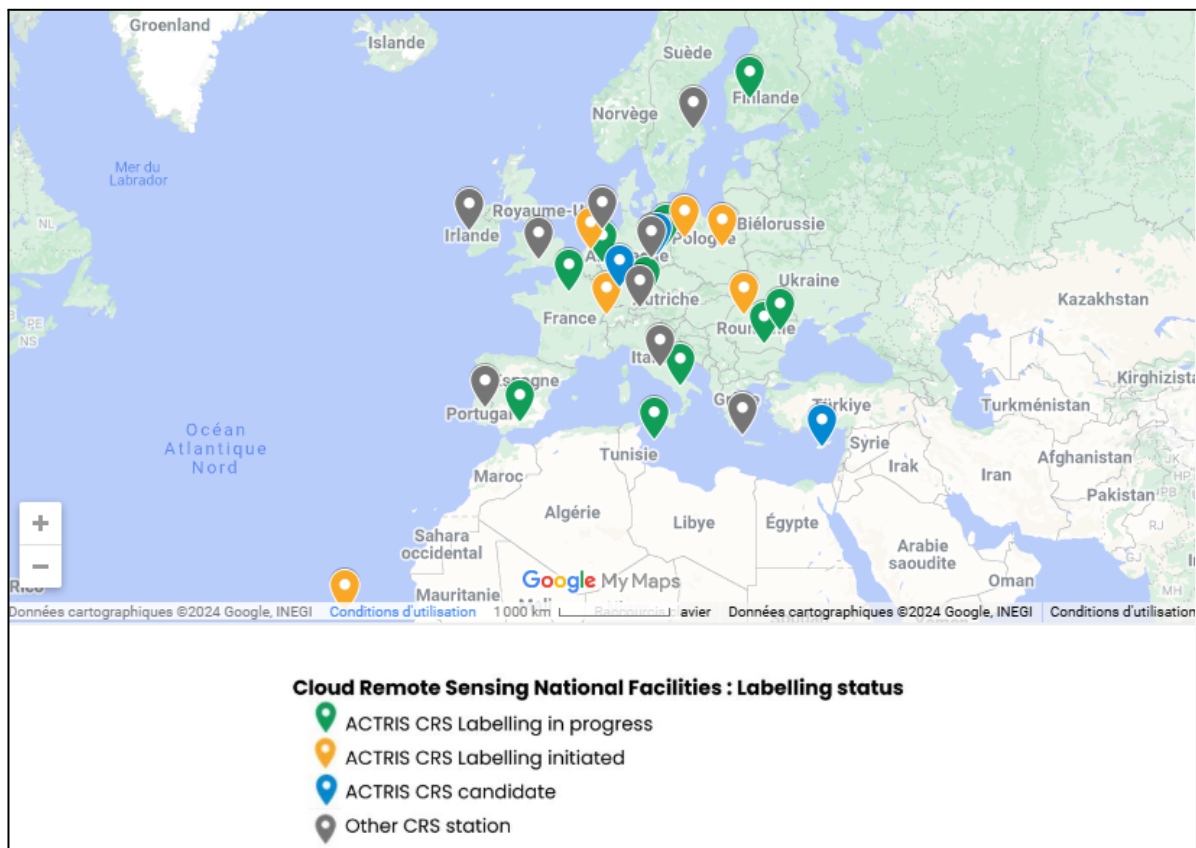




In case of any question, please contact Marc-Antoine Drouin from CCRES-FR (marc-antoine.drouin@lmd.ipsl.fr).
Documentation to access the service is available at <https://ccres.ipsl.fr/docs/services/grafana-server/>

3. Labelling process

Update on labelling step 1a



[Cloud Remote Sensing NFs map](#)

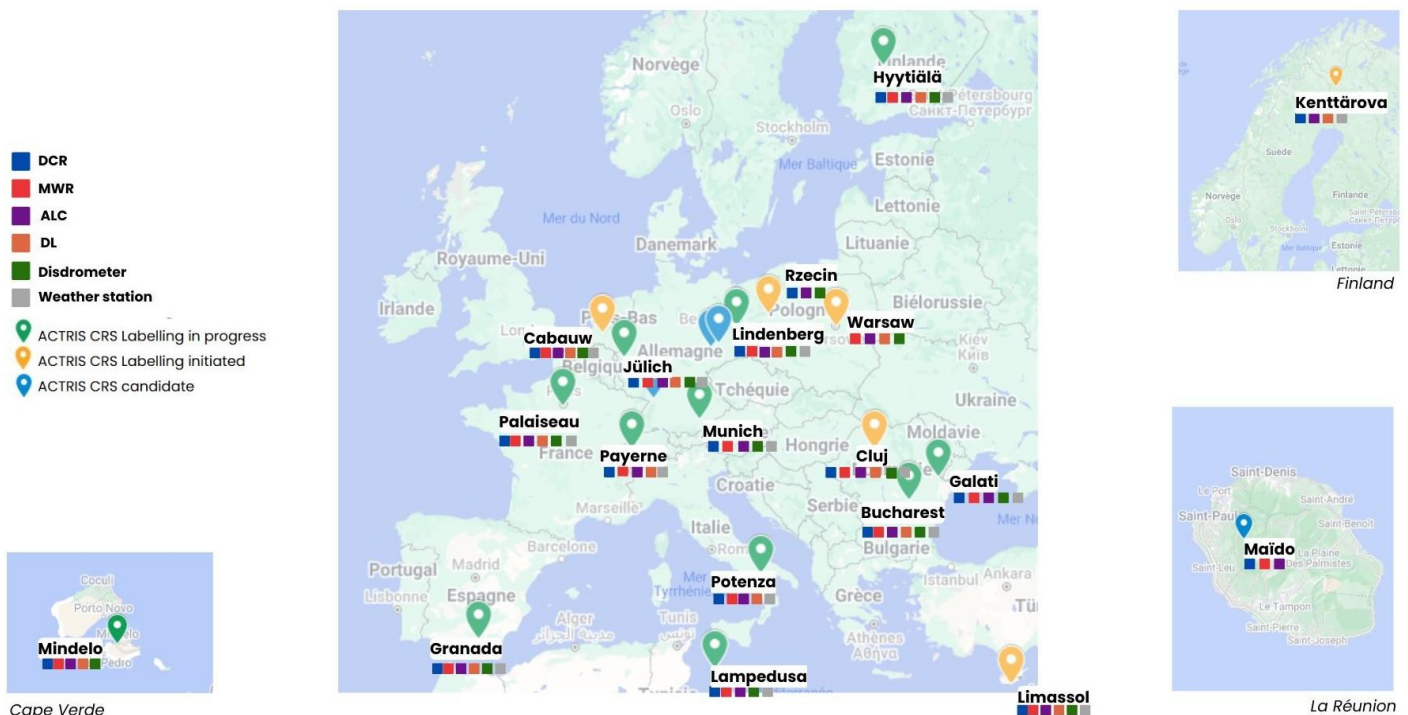
Stations initially accepted for labelling step 1a: AGORA (Spain), CIAO-Potenza (Italy), CVAO (Cape Verde), JOYCE (Germany), Lampedusa (Italy), MOL-RAO (Germany), München (Germany), Payerne (Switzerland), RADO-Bucharest (Romania), RADO-Galati (Romania), SIRTa (France), SMEAR II (Finland).

Stations in process to enter labelling step 1a : Cabauw (Netherlands), CARO (Cyprus), Pallas (Finland), RADO-Cluj (Romania), Rzecin (Poland), Warsaw (Poland).

Stations to enter the process in 2025 : Chilbolton (UK), Leipzig (Germany), Melpitz (Germany), OPAR (France).

NFs instrument diversity

The map below shows instruments of stations initially accepted for labelling or in progress.



All information about CRS stations instruments can be found on this map : [NF instrument diversity](#)

- **Reminder for labelling :** One disdrometer (OTT Parsivel2 or Thies LNM for example) is mandatory for the NF labelling, as well as a weather station and a rain gauge. Please see CCRES requirements for these instruments in the SOPs resources at the end of this newsletter.

- Update on the **current status of NFs instruments** :

		DCR	MWR	Ceillometer	Doppler Lidar	Disdrometer	Weather Station
Cyprus	CARO/Limassol	Metek MIRA35	Rpg HATPRO G2	Lufft CHM15k	Halo Streamline	OTT Parsivel2	
Finland	Pallas/Kenttäröva	Rpg DCR94		Vaisala CL61	Halo Streamline	OTT Parsivel2	Weather station
	SMEAR II/Hyytiälä	Rpg DCR94	Rpg HATPRO G5	Vaisala CL61	Halo Streamline	OTT Parsivel2	Weather station
France	SIRTA/Palaiseau	Latmos BASTA94	Rpg HATPRO G5	Lufft CHM15k	Vaisala WLS70	OTT Parsivel2	Weather station
Germany	OPAR/Maïdo	Rpg DCR94	Rpg HATPRO G5	Campbell CSI35			
	CVAO/Mindelo	Metek MIRA35	Rpg HATPRO G5	PollyXT	Halo Streamline	OTT Parsivel2	Vaisala WXT536
	LACROS/Leipzig	Rpg DCR94	RPG HATPRO G5	Lufft CHM15k	Halo Streamline	OTT Parsivel2	Vaisala WXT536
	JOYCE/Jülich	Metek MIRA35	Rpg HATPRO G5	Lufft CHM15k	Halo Streamline	OTT Parsivel2	Weather station
	Melpitz	Rpg DCR94		Lufft CHM15k			Weather station
	MOL-RAO/Lindenberg	Metek MIRA35	Rpg HATPRO G5	Lufft CHM15k	Halo Streamline	Thies LPM	Weather station
	München	Metek MIRA35	Rpg HATPRO G5	Lufft CHM15k		OTT Parsivel2	Weather station
	KLOCX/Karlsruhe	Rpg DCR94	RPG HATPRO G5	Vaisala CL31	Halo Streamline	OTT Parsivel2	
Italy	CIAO/Potenza	Metek MIRA35	Rpg HATPRO G5	Vaisala CL51	Halo Streamline	OTT Parsivel2	Vaisala AWS310
	Lampedusa	Metek MIRA35	Rpg HATPRO G5	Lufft CHM15k		Thies LPM	Vaisala AWS310
	UNIAQ/CETEMPS	Rpg DCR94		Vaisala CL51	Vaisala WLS100S	Thies LPM	Vaisala WXT536
Netherlands	Ruisdael Obs./Cabauw	Rpg DCR94	Rpg HATPRO G5	Lufft CHM15k	Vaisala 200s	OTT Parsivel2	Weather station
Norway	Ny Alesund	Rpg DCR94	Rpg HATPRO G2	Vaisala CL51		OTT Parsivel2	
Poland	Rzesin	BASTA94		Lufft CHM15k		OTT Parsivel2	
	Warsaw		Rpg HATPRO G2	PollyXT	Halo Streamline	OTT Parsivel2	
Romania	RADO-Cluj	Rpg DCR94	Rpg HATPRO G5	Lufft CHM15k	Halo Streamline	OTT Parsivel2	Thies Clima
	RADO-Bucharest	Metek MIRA35/RPGDCR94	Rpg HATPRO G5	Lufft CHM15k	Halo Streamline	OTT Parsivel2	Weather station
	RADO-Galati	Rpg DCR94	Rpg HATPRO	Lufft CHM15k		OTT Parsivel2	Weather station
Spain	AGORA/Granada	Rpg DCR94/DCR35	Rpg HATPRO G2	Lufft CHM15k	Halo Streamline	OTT Parsivel2	Campbell CR1000X
Sweden	NORUNDA	Rpg DCR94		Vaisala CL51		OTT Parsivel2	
Switzerland	Payerne	Rpg DCR94	Rpg HATPRO G5	Lufft CHM15k	Vaisala WLS200S	Thies LPM	Weather station
UK	Chilbolton Obs.	RAL Copernicus/Metek MIRA	Rpg HATPRO G5	Vaisala CL51	Halo Streamline	Thies LPM	

If your instruments are not listed in this table or if you see any error, please inform Elisa Villard (evillard@ipsl.fr).

The labelling process is on-going for Cloud Remote Sensing observatory platforms, while the **procedure for mobile stations** to enter the labelling process is under development by the ACTRIS Head Office. This process will be **simultaneous to all components** of the mobile National Facilities.

Information on labelling step 1b and step 1c will be delivered during our spring workshop on May 19 and 20.

4. EarthCARE Cal/Val campaign

EarthCARE was successfully **launched on May 29, 2024**. Read more about the mission at this link : [EarthCARE launched to study the role of clouds and aerosols in Earth's climate](#) (European Space Agency). Global information about the mission is available on the [ESA website](#) and **updated SOPs** are available [here](#).

The data needed for the Cal/Val activities are transferred to the ESA server via the CLU Data Centre. As a facility PI involved in EarthCARE, please **make sure that you follow the Satellite Cal/Val SOPs and that your data are uploaded to CLU**.

In the third week of March, the **second in-orbit EarthCARE validation workshop** was held in Frascati, Italy. Lukas Pfizenmaier (U. Cologne) and Nathan Feuillard (LATMOS/IPSL) presented their results conducted together with Felipe Toledo Bittner and the ACTRIS CCRES team **using the ACTRIS cloud radars to validate EarthCARE CPR level 1 and level 2 measurements – reflectivity and Doppler velocity**. The data comparison is on a statistical basis based on work from Protat et al., 2009, and Kollias et al., 2019. We used vertical profiles ± 1 h around the overpass from the ground-based sites, and all profiled from overpasses within a radius of 200 km for reflectivity and 100 km for Doppler velocity.

We modified the well-known method for comparing reflectivity by **statistically testing the ground and CPR data**. This allows us to exclude height ranges where the data are statistically not comparable within selected boundaries, in order to reduce uncertainties in the comparisons. An open version of both presentations are available: [reflectivity presentation](#), [doppler velocity presentation](#).

Since EarthCARE is the first mission ever to deliver Doppler velocity validation, it represents a **new area of research**. To achieve this, we utilised two versions: for homogeneous overpasses near the site, one can use ground and CPR data scatter plots. However, for statistical comparison, the bias of the mean profiles from both data sets is employed. Here, we also observe that our findings are within the bias introduced by the CPR antenna miss-pointing.

We can conclude that ACTRIS CRS stations, CCRES and CLU were ready in time to provide calibrated and quality controlled Cloud Radar measurements to evaluate the CPR cloud radar.

You may find below an overview of the results presented at the EarthCARE workshop. Please note these results are still preliminary.

North
Number of overpasses

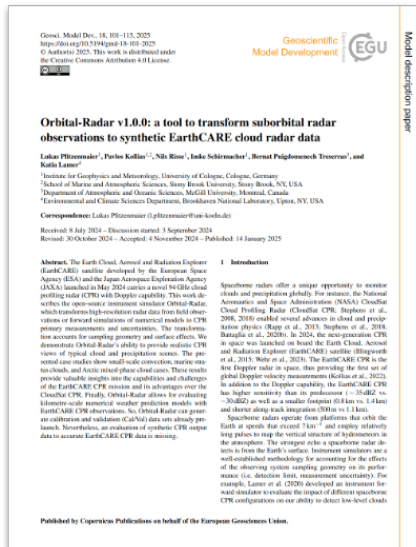
Site	Ze (ACTRIS)	Vm (BA)	Vm (BB)	Vm (CA)	Comments Vm
Ny Ålesund	-6 ± 1 dB	0.65 ms^{-1}	no ground	$0,17 \text{ ms}^{-1}$	Calibration monitored by ACTRIS
Hyytiälä	3 ± 1 dB	0.48 ms^{-1}	0.25 ms^{-1}	$0,26 \text{ ms}^{-1}$	mirroring ground echo in the data
Lindenberg	-1 ± 1 dB	0.59 ms^{-1}	0.43 ms^{-1}	-0.21 ms^{-1}	To be calibrated by ACTRIS (2025) & monitoring
Cabauw	1 ± 1 dB	0.65 ms^{-1}	0.33 ms^{-1}	0.42 ms^{-1}	No height bins selected for comparison
Jülich	-2 ± 1 dB	0.49 ms^{-1}	To low data	0.26 ms^{-1}	Calibrated by ACTRIS (2024) + monitoring
Palaiseau	-1 ± 1 dB	0.53 ms^{-1}	0.47 ms^{-1}	0.28 ms^{-1}	Calibrated by ACTRIS (2024) + monitoring
Munich	1 ± 1 dB			0.44 ms^{-1}	Calibration monitored by ACTRIS
Galati		0.56 ms^{-1}	0.34 ms^{-1}	-0.09 ms^{-1}	Calibration monitored by ACTRIS
Bucharest		0.78 ms^{-1}	0.46 ms^{-1}	0.08 ms^{-1}	Calibration monitored by ACTRIS
Potenza	-4 ± 1 dB			0.32 ms^{-1}	Calibration monitored by ACTRIS
Granada	-1 ± 2 dB	0.75 ms^{-1}	To low data	0.01 ms^{-1}	Calibration monitored by ACTRIS Low number of overpasses
Mindelo	-1 ± 1 dB				Low number of overpasses
Neymayer		0.18 ms^{-1}	0.46 ms^{-1}	-0.31	

In case of any question, please contact Lukas Pfitzenmaier (L.pfitzenmaier@uni-koeln.de) and Nathan Feuillard (nathan.feuilleard@latmos.ipsl.fr).

5. CLU Data Centre updates

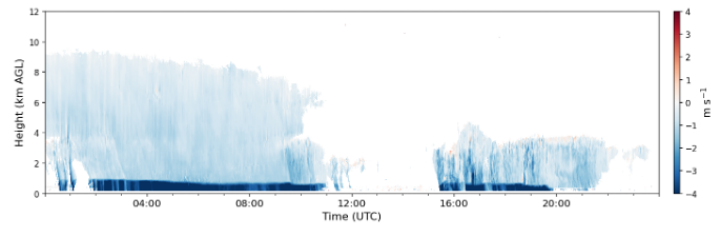
- Support for WindCube 400S added, and more rain gauge and weather station types added.
- If your site doesn't have a description on the sitepages in cloudnet yet, please send a description by email (actris-cloudnet@fmi.fi). For example, see Hyytiälä : <https://cloudnet.fmi.fi/site/hyytiala>.
- If you have multiple instruments of the same type (such as two radars), we can now specify which will be used as the default instrument for processing of geophysical products. Let us know by email (actris-cloudnet@fmi.fi).
- More housekeeping data is being supplied to the housekeeping data monitoring service.
- New experimental products added (applied operationally across the network):
 - Cloud radar: Synthetic EarthCARE data from ground-based radars using the orbital radar tool (Pfitzenmaier et al., 2024)

Orbital-Radar simulator

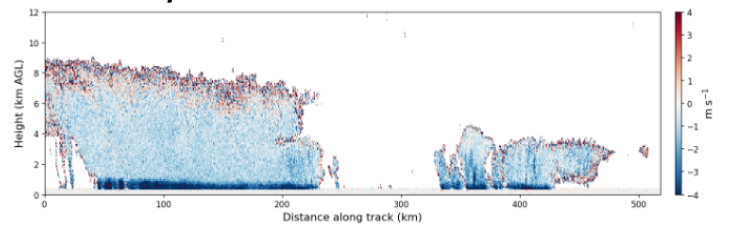


Pfizenmaier et al.,
Geosci. Model Dev. (2024)

Ground-based radar data



“Synthetic EarthCARE data”



(experimental Cloudnet product)

[Search data](#)
[Visualise data](#)
[Documentation](#)
[Sites](#)
[Instruments](#)
[Products](#)
[Contact](#)

Location

Select

☐ Show all sites

Date

Current year Last 30 days Today

2025-04-14

☐ Show date range

Product

Synthetic EarthCARE radar

☒ Show experimental products

Instrument model

Select

Specific instrument

Select

Results

Found 14 results

volatile experimental

Data object	Date
Synthetic EarthCARE radar from Bucharest	2025-04-14
Synthetic EarthCARE radar from Cabauw	2025-04-14
Synthetic EarthCARE radar from Galați	2025-04-14
Synthetic EarthCARE radar from Granada	2025-04-14
Synthetic EarthCARE radar from Hyytiälä	2025-04-14
Synthetic EarthCARE radar from Jülich	2025-04-14
Synthetic EarthCARE radar from Kenttäröva	2025-04-14
Synthetic EarthCARE radar from Limassol	2025-04-14
Synthetic EarthCARE radar from Lindenberg	2025-04-14
Synthetic EarthCARE radar from Malmö	2025-04-14
Synthetic EarthCARE radar from Munich	2025-04-14
Synthetic EarthCARE radar from Neumayer Station	2025-04-14
Synthetic EarthCARE radar from Palaiseau	2025-04-14
Synthetic EarthCARE radar from Payerne	2025-04-14

[Download all](#)

14 files (276.9 MB)

Synthetic EarthCARE radar from Bucharest

14 April 2025

Convolved and integrated radar reflectivity factor

[Download](#) [Details →](#)

Product Synthetic EarthCARE radar

Location Bucharest, Romania

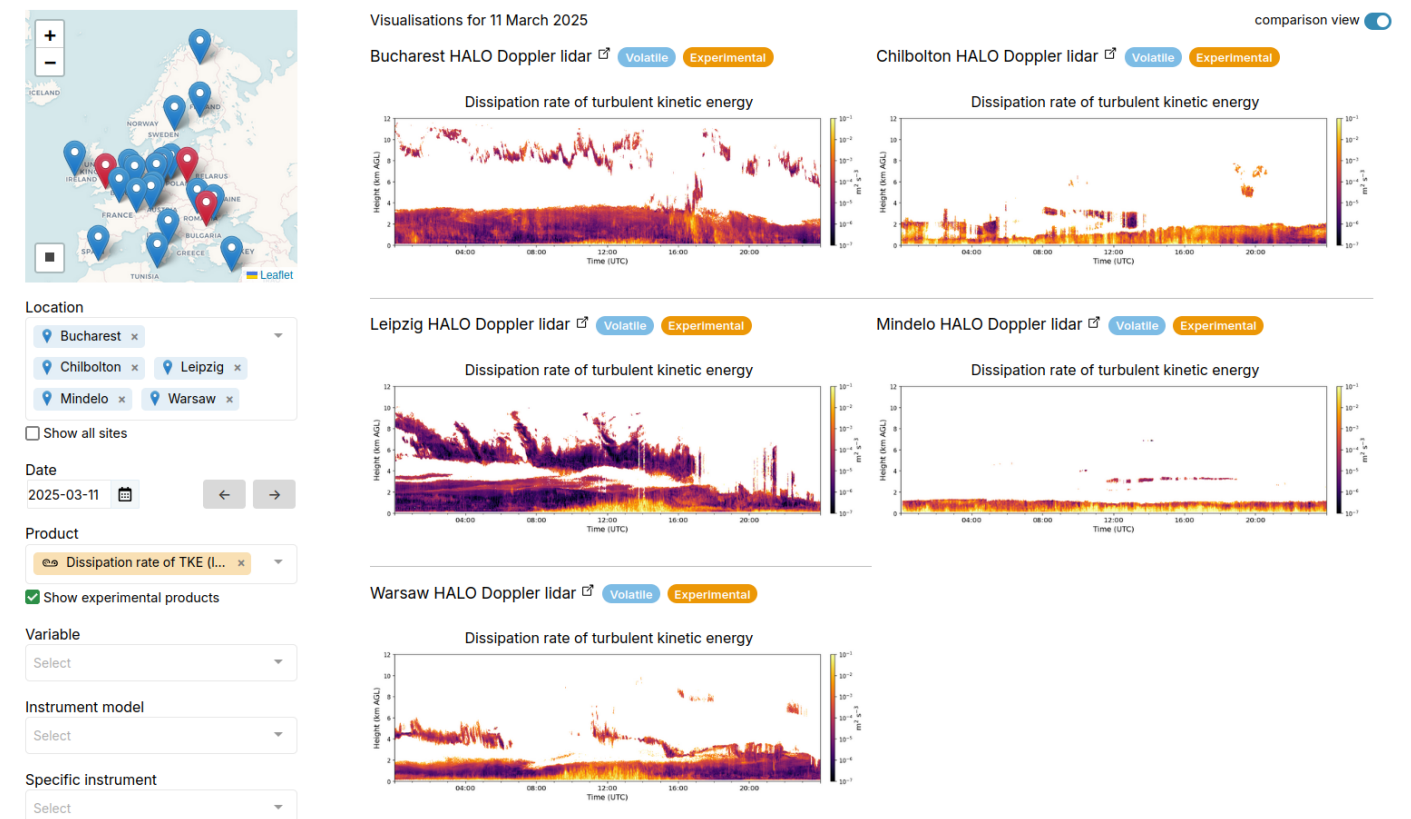
Date 2025-04-14

Size 18.7 MB

Last modified 2025-04-14 10:22:31 UTC

Quality check ✔ Pass

- Doppler lidar: Dissipation rate of turbulent kinetic energy (O'Connor et al., 2010)



In case of any questions, please contact Ewan O'Connor (Ewan.Oconnor@fmi.fi).

6. Calendar

- April 27th – May 2d 2025 : **EGU 2025** in Vienna (Austria)
- May 19th and May 20th 2025 from 9am to 12am CEST : **CCRES/CLU spring workshop**, online.
- June 23–27th 2025 : **ESA Living Planet Symposium** in Vienna (Austria)
- August 25–29th, 2025 : **AMS 41st International Conference on Radar Meteorology**, Toronto (Canada)
- September 2–5th 2025 : **CCRES Training school** in Munich (Germany)
- September 8–12th 2025 : **EMS Annual Meeting** in Ljubljana (Slovenia)
- October – December 2025 : Cloud radar **calibration campaign** in Granada (Spain)
- October 20–24th 2025 : **ACTRIS Week**, Evora (Portugal)
- April 20–24th 2026 : **ACTRIS Science Conference**, Oslo (Norway)

7. Resources

CCRES website for operational services

A **new website** is being implemented by CCRES to provide a platform for National Facilities to access **operational services**. A beta-version is available for facilities to **monitor the stability of operations and data quality**, and **track instrument parameters** of their station, while accessing **documentation** about CCRES operational services, **SOPs, codes** and available tools on the interface. <https://ccres.aeris-data.fr/> **CCRES Newsletters** are now available on this website as well.

General information about ACTRIS and CCRES units, communication, procedures and news can still be found on the ACTRIS website at this address : <https://www.actris.eu/topical-centre/ccres>

Cloudnet data portal (<https://cloudnet.fmi.fi/>) provides access to **all ACTRIS Cloud Remote Sensing data**. It hosts **data processing and curation service** for ground-based cloud remote sensing measurements.

NF instrument diversity : online resources

An **interactive map** showing the stations status and their instruments is available on [ACTRIS CCRES website](#), as well as on [OpenStreetMap](#) : click on the layers and filters on the left in order to view instruments diversity, or click on a station to get to know the details about its instruments.

Labelling process

The procedure for labelling is explained further in details in this document presented during our last workshop : [Labelling process](#)

SOPs

SOPs : At this link, you can find the Standard Operating Procedures for each instrument.

[SOPs for EarthCARE](#) : At this link, you can find the last version (March 2024) of Standard Operating Procedures related to EarthCARE Cal/Val campaign.

EarthCARE Cal/Val

Last EarthCARE results have been shared by Lukas Pfizenmaier and Nathan Feuillard at the first ESA-JAXA EarthCARE In-Orbit Validation Workshop (14-17th January, virtual event).
An open version of the presentation is available [here](#).

Housekeeping data

The training session on HKD monitoring was organised on May 7, here is the presentation : [Grafana training session](#)

Last updates were presented during November 2024 workshop and are available here :

 **6. HKD_monitoring.pdf**

[Documentation and access to Grafana](#) are accessible on [CCRES operational services website](#).

Workshop material

All CCRES workshops presentations are available [here](#).

Publications

CCRES publications are available [here](#).