

The logo for ACTRIS CCRES. It features a stylized arch above the text. The arch is composed of a teal-to-blue gradient on the left and a solid dark blue on the right. The text "ACTRIS" is in a large, bold, dark blue sans-serif font, and "CCRES" is in a smaller, bold, dark blue sans-serif font below it.

# ACTRIS

## CCRES

## Cyprus Atmospheric Remote-Sensing Observatory (CARO) National Facility

Progress, Challenges, and Lessons Learned

Presenter: Konstantinos Chrysostomou, PhD student

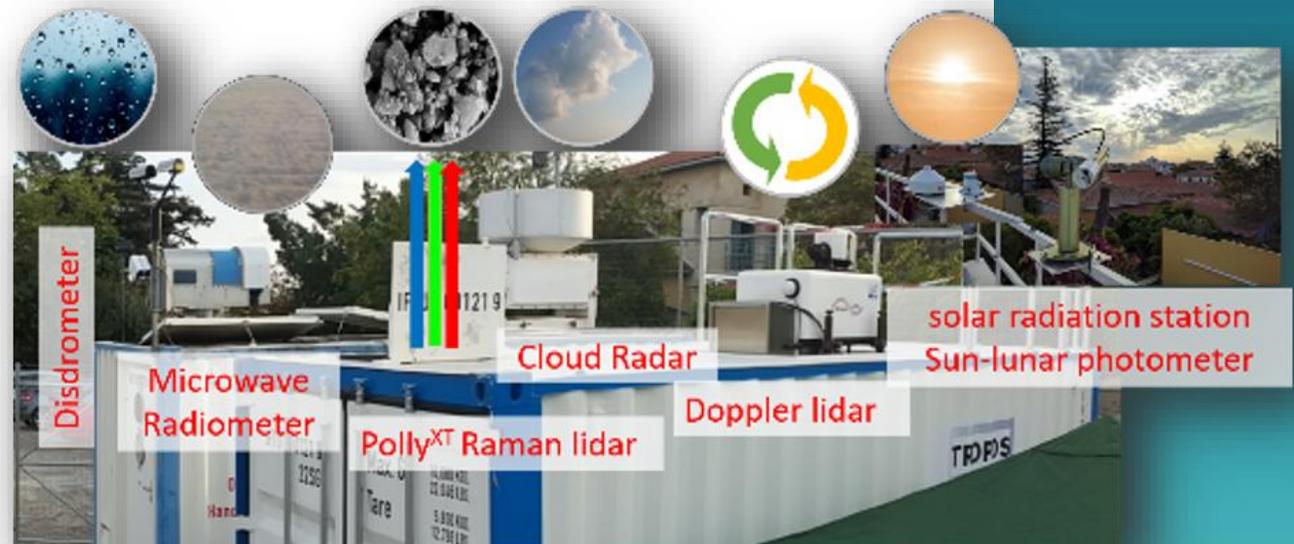
*CCRES/CLU Autumn Workshop, Evora, 22 October 2025*



Limassol ( $34.677^{\circ}\text{N}$ ,  $33.038^{\circ}\text{E}$ ) @ 10 m amsl

→ Consists of an aerosol remote sensing (ARS) and a cloud remote sensing (CRS) observational platform.

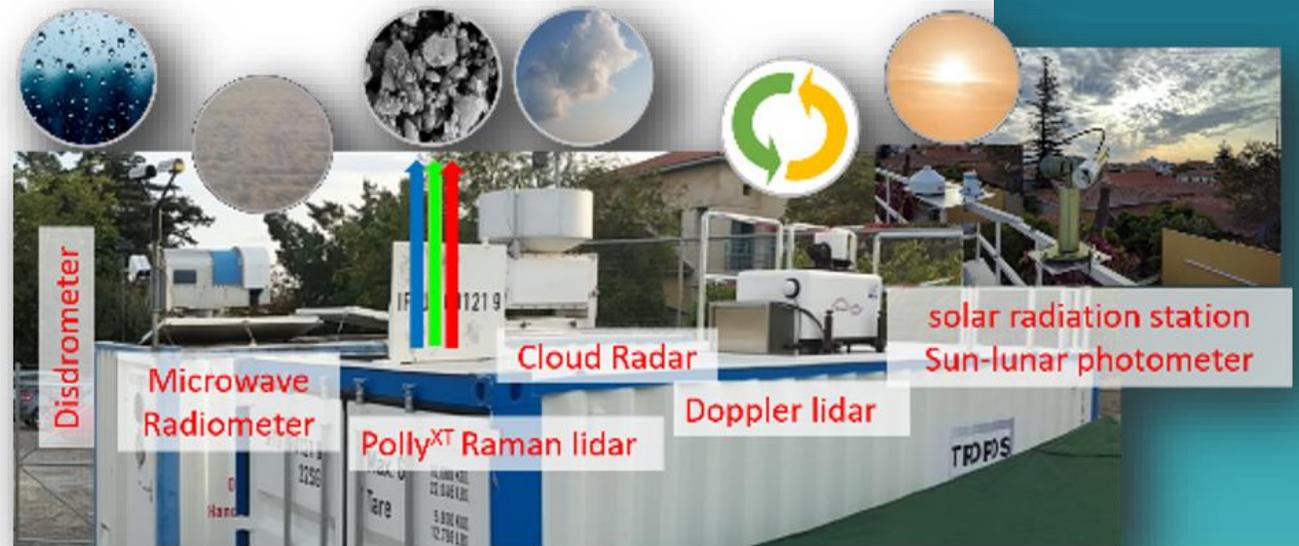
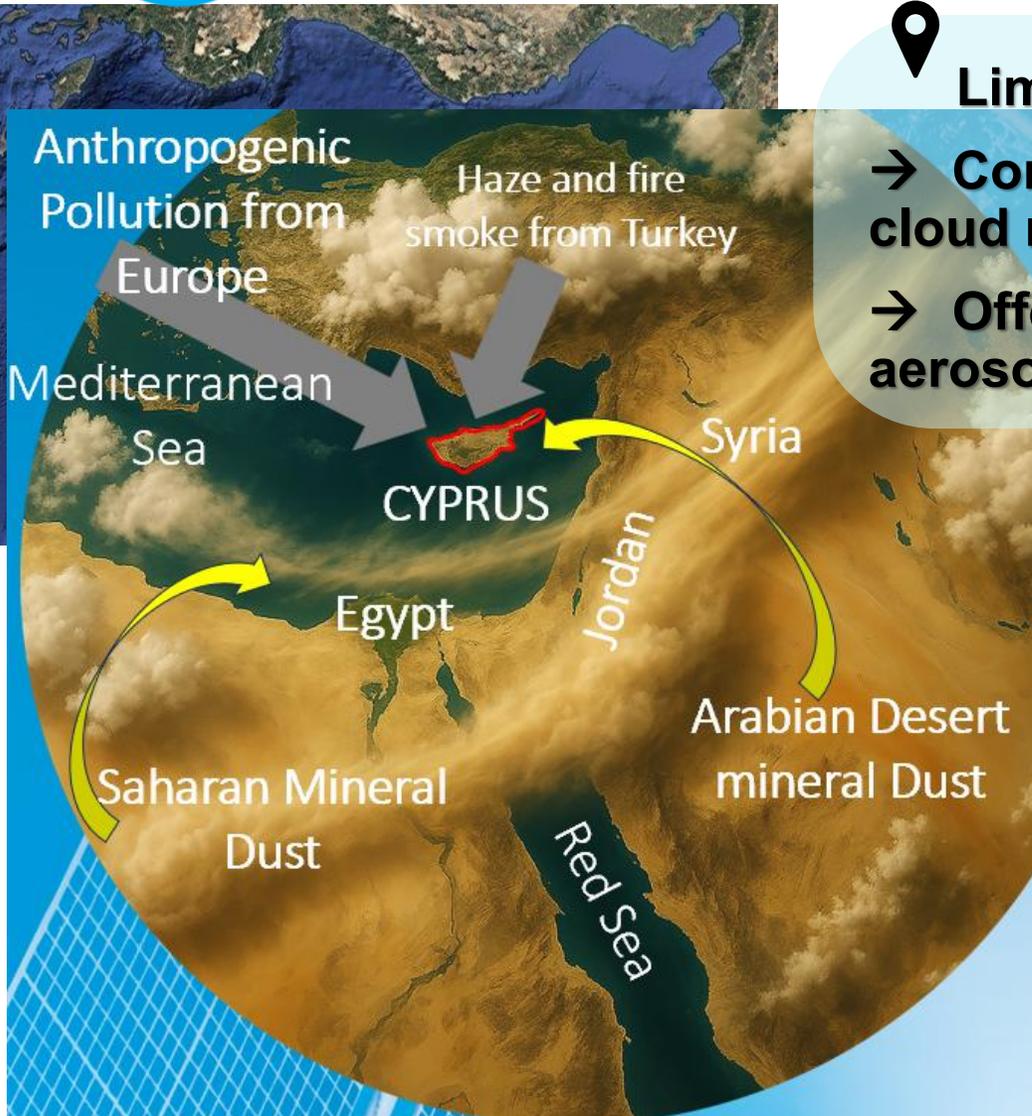
→ Offers complete insights into atmospheric dynamics, aerosol load, and cloud dynamics.





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- Offers complete insights into atmospheric dynamics, aerosol load, and cloud dynamics.



# CARO – Instrumentation and Measurements

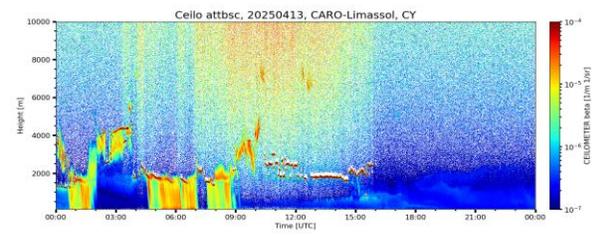
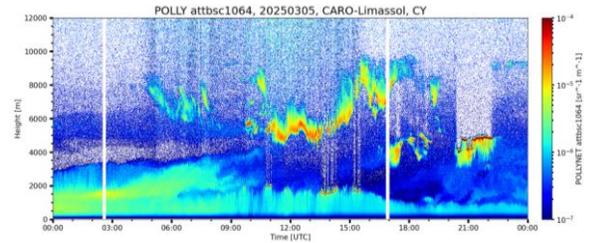


**PollyXT  
Raman Lidar**



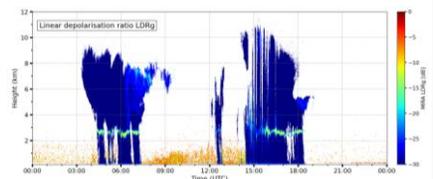
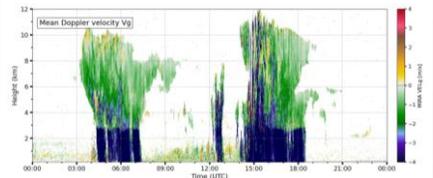
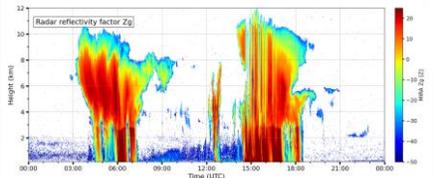
**Ceilometer**

## Aerosols



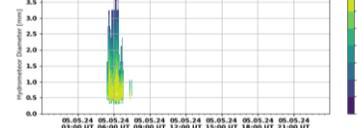
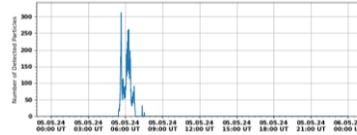
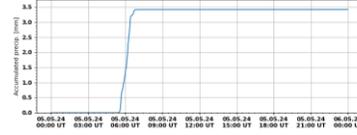
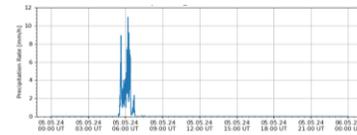
**Cloud  
Radar**

## Clouds



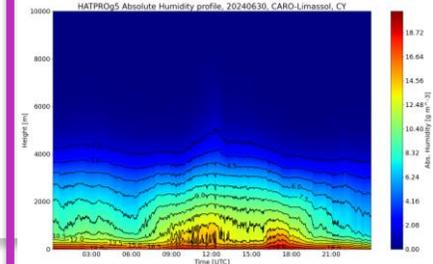
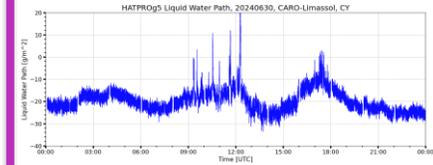
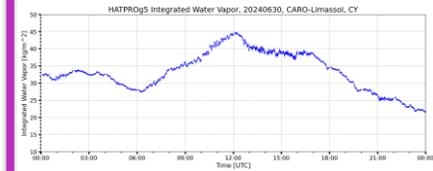
**Disdrometer**

## Precipitation



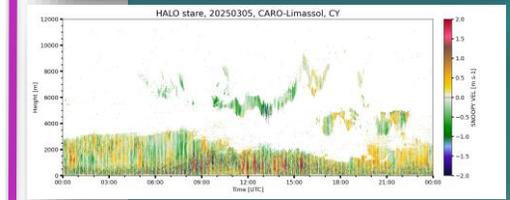
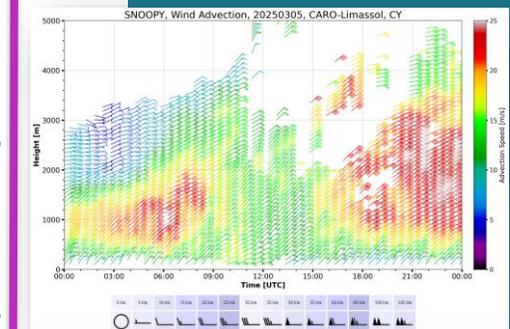
**Microwave  
Radiometer**

## Temperature & Humidity



**Doppler Lidar**

## Dynamics



# HATPRO-G5 MWR

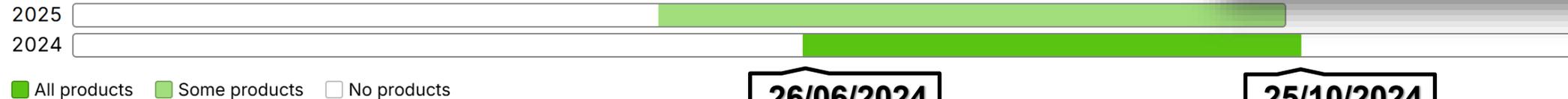
## Instrument

PID <https://hdl.handle.net/21.12132/3.33ef1f084a964bff>  
Owner ERATOSTHENES Centre of Excellence (ECoE)  
Model RPG-HATPRO-G5  
Type scanning microwave radiometer  
Serial number 0030242

## Locations

2024-06-26 – now [Limassol](#)

## Product availability



23/05/2025

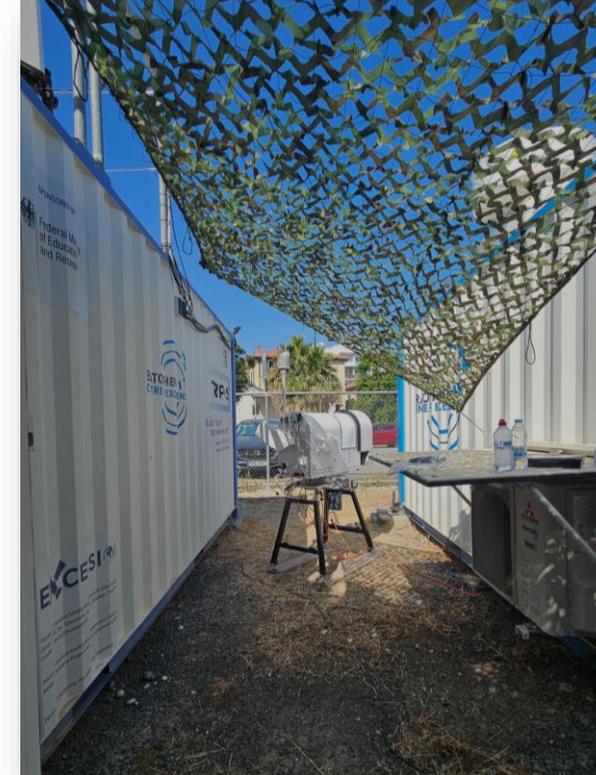
In operation, but only  
in single pointing mode

26/06/2024

Start of operation  
at CARO NF

25/10/2024

Out of service due to water leakage  
inside the cloud container, causing  
short-circuit problems



→ The internal elevation motor for the IR-Radiometer as well as the internal elevation motor for the (internal) mirror were defective.

→ Changes were made at the power supply of the IR motor to prevent defects

→ Replacement of a fuse

# DCR Mira-35

PID <https://hdl.handle.net/21.12132/3.9af43f93e39649f5>  
Owner ERATOSTHENES Centre of Excellence (ECoE)  
Model METEK MIRA-35  
Type Doppler non-scanning cloud radar  
Serial number MBR8

## Locations

2024-06-26 – now Limassol



**Back in  
operation**

Product quality / **21/02/2025** radar



■ Pass ■ Info ■ Warning ■ Error ■ Legacy ■ Missing QC report ■ No data

**26/06/2024**



**Start of operation  
at CARO NF**

**05/11/2024**



**Transmitter  
stopped working**



- The radar was still under guarantee by the METEK company
- The transmitter was sent for repairment
- We lost the opportunity to record the radar's first rainy/cloudy season

# HATPRO-G5 MWR – Absolute Calibration

09 Oct.2025 → Change of radome



→ 1<sup>st</sup> radome change

→ Faced some problems with the stability of the platform

# HATPRO-G5 MWR – Absolute Calibration

10 Oct.2025 → LN2 Calibration



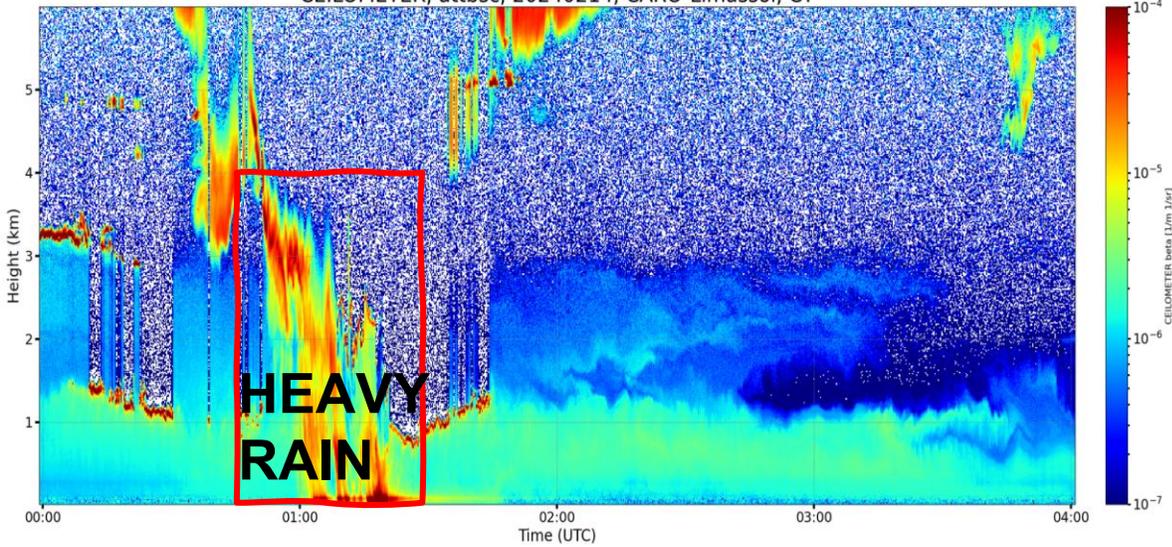
- ✓ Successful calibration
- ✓ Difference between the old and new System Noise Temperatures  $< 3$  K

**EXTREME WEATHER EVENT**  
**T O R N A D O**  
**1 4 . 0 2 . 2 0 2 4**

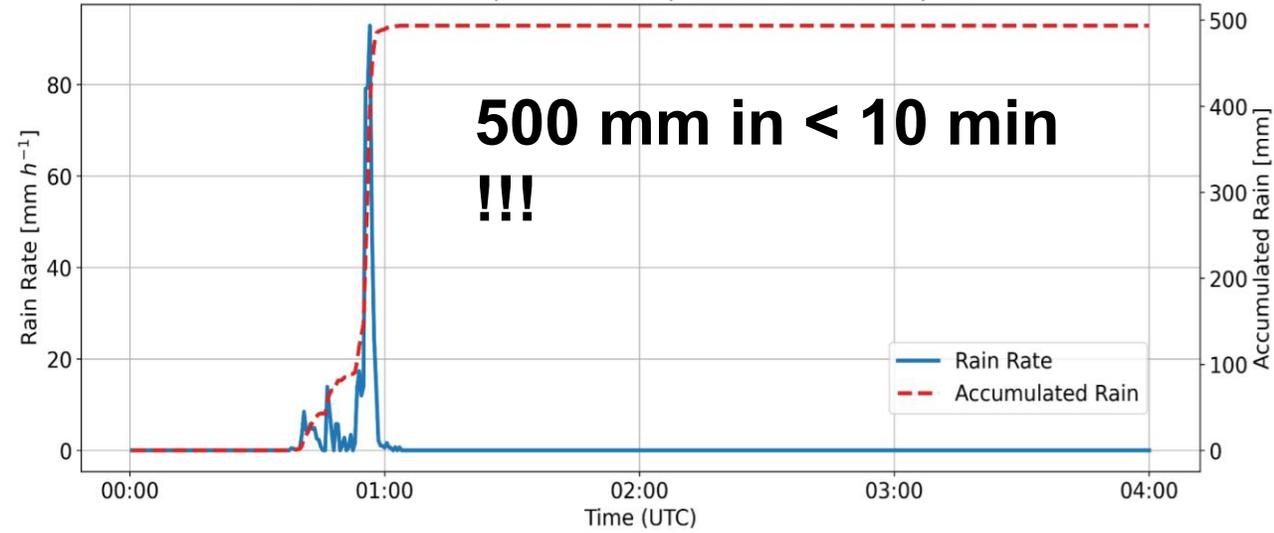


# TORNADO 14.02.2024

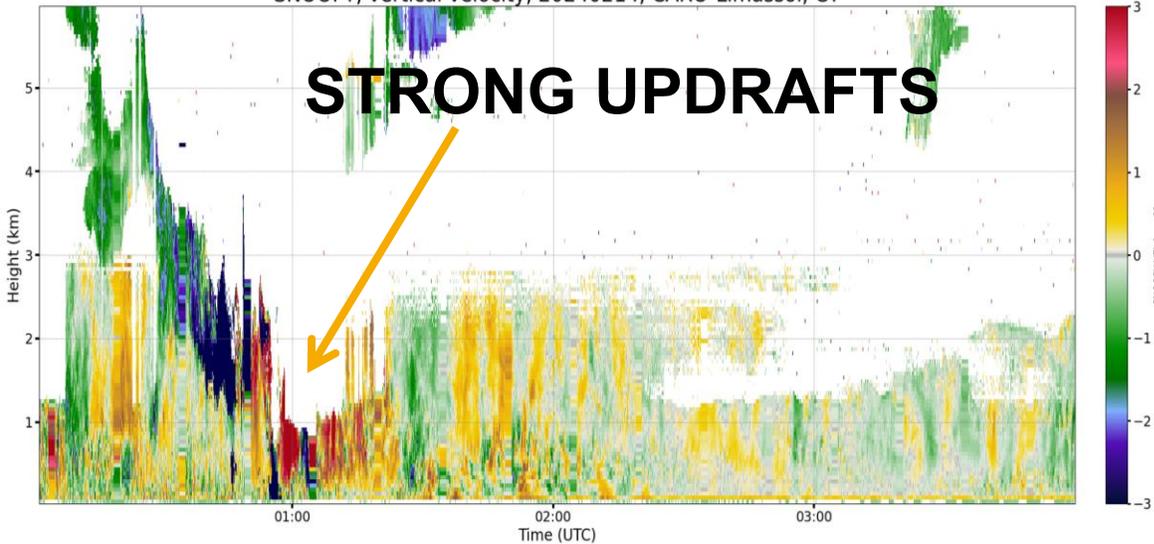
CEILOMETER, attbsc, 20240214, CARO-Limassol, CY



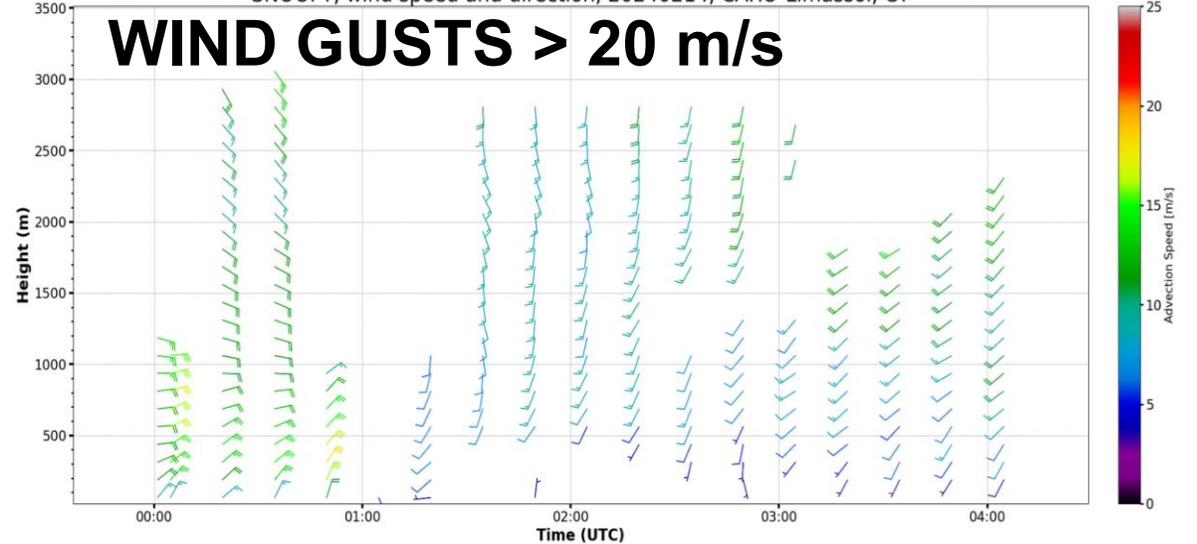
Disdrometer, 20240214, CARO-Limassol, CY



SNOOPY, vertical velocity, 20240214, CARO-Limassol, CY



SNOOPY, wind speed and direction, 20240214, CARO-Limassol, CY





Thank you !