



Cloud Remote Sensing Data Centre - CLU

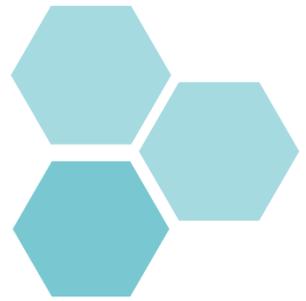
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Calibration and monitoring activities



- What do we need to monitor?
 - What comes with the housekeeping data?
 - Store data at CLU?
 - Processing - who is responsible?
- Routine recording
 - Embedded within data files or separate?
 - New API
 - Upload frequency
- Access monitoring data
 - Access via API
 - API design
 - Who has access?
- How to communicate the monitoring?

Calibration and monitoring activities



- Calibration database
 - Database type
 - Timeseries (continuous)
 - Associated meta data
 - Method
 - Who by
 - Links to calibration data (doi ?)
- Access
 - Upload values
 - Download values
 - Interpolate between calibration
 - Stepwise function between calibration

Calibration API

- We have implemented a simple API
- Calibration API v1.0
 - Database
 - Not continuous
 - JSON request and response

[Docs home](#)

Calibration API reference

This is a documentation for the HTTP API for configuring the calibration factors used in Cloudnet data processing.

Routes

GET /api/calibration

This route takes the following URL parameters:

- `site` : Site id
- `instrument` : Instrument id
- `date` : Date of the calibration
- `showAll` : Boolean, show history of previous calibration factors. By default, only the most recent calibration factor is returned.

NOTE: For dates that do not have a calibration factor set, the previous calibration factor is returned. Example: given that there is a calibration factor for date 2021-01-01, querying the factor for 2021-01-02 will return the calibration factor of 2021-01-01.

POST /calibration

The route takes the following parameters in a JSON object:

- `site` : Site id
- `instrument` : Instrument id
- `date` : Date for which the calibration is valid
- `calibrationFactor` : Calibration factor as a number

NOTE: Credentials are required for posting new calibration factors. Contact actris-cloudnet@fmi.fi if you have any questions.

Calibration API

Calibration API v1.0

- JSON request and response

```
GET https://cloudnet.fmi.fi/api/calibration?site=lindenberg&instrument=chm15k&date=2021-01-01
```

Response body:

```
[  
  {  
    "createdAt": "2021-03-18T11:08:40.527Z",  
    "calibrationFactor": 4e-12  
  }  
]
```

Calibration API

Calibration API v1.0

- JSON request and response

```
GET https://cloudnet.fmi.fi/api/calibration?site=lindenberg&instrument=chm15k&date=2021-01-01
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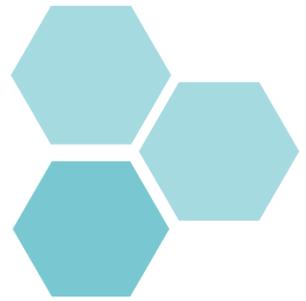
Response body:

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  {  
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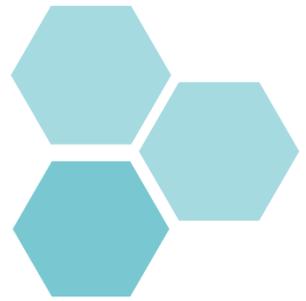
- **This is used by CloudnetPy in our standard processing**

DCR monitoring

- Need housekeeping data and MDF files
 - MDF -> Instrument setup
 - Temperature
- Monitor
 - Pointing angle
 - Background
 - interference
 - Calibration
 - Radome wetting



ALC monitoring



- Need housekeeping data
 - Laser energy
 - Window transmittance
 - Temperature
 - Laser temperature (Vaisala)
- Monitor
 - Overlap function
 - Near-range chromatic effects
 - Background
 - Pointing angle (for specular reflection)
 - Calibration
- Fog

MWR monitoring

- Need housekeeping data and MDF files
 - MDF -> Instrument setup
 - Temperature
- Monitor
 - Pointing angle (for scanning instruments)
 - Calibration
- Radome wetting

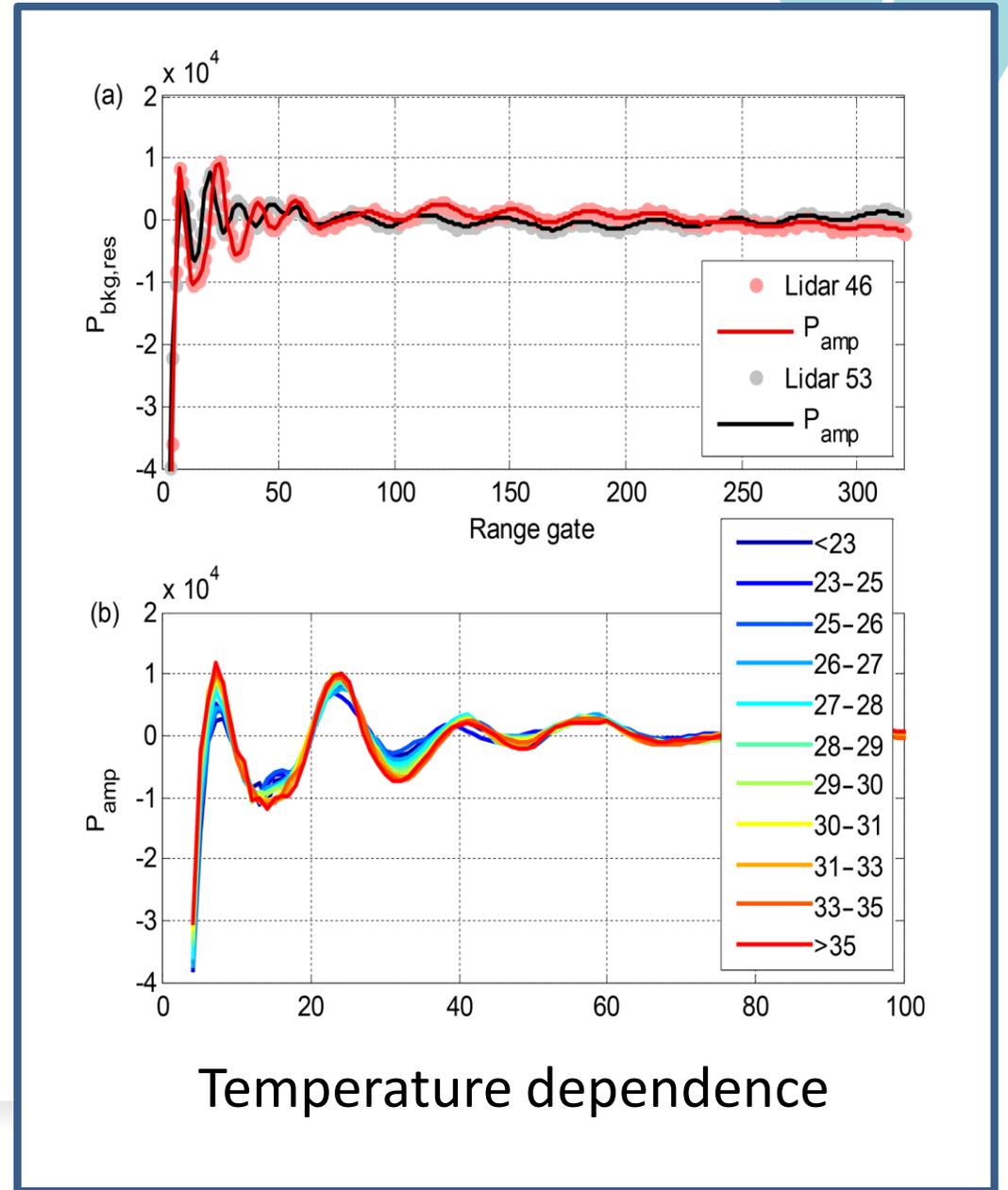
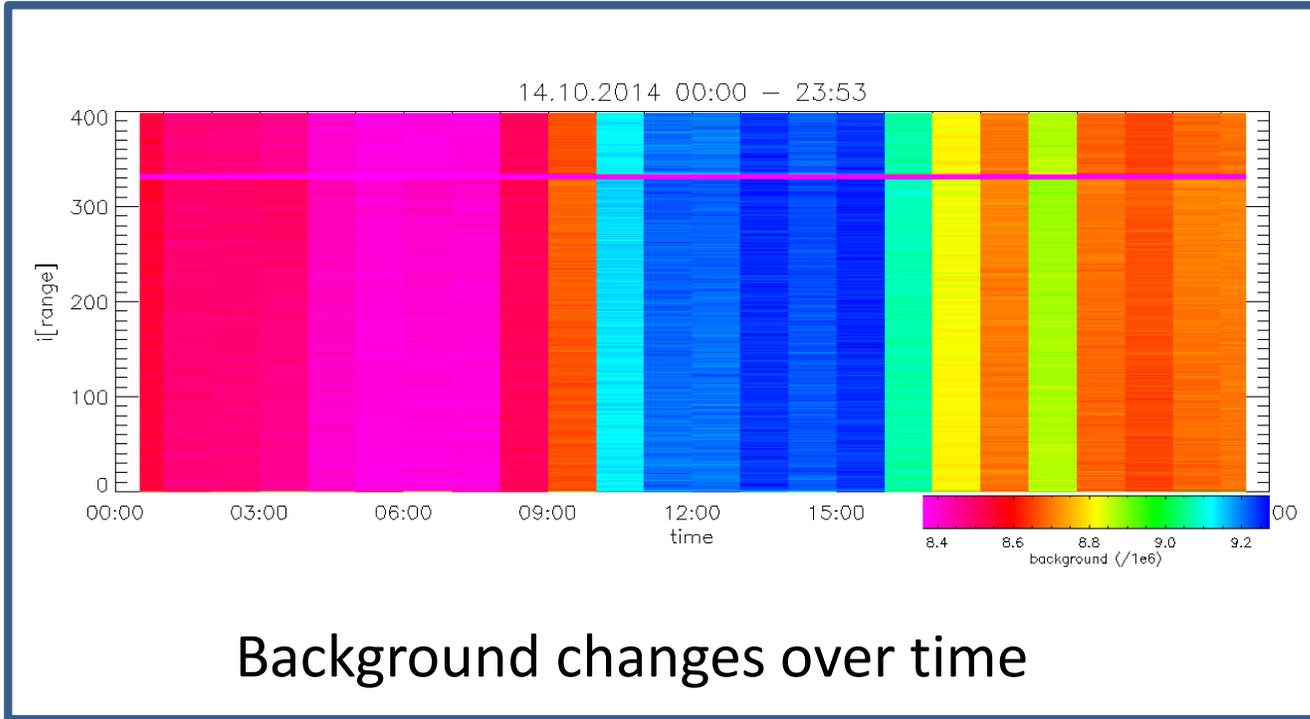


Doppler lidar monitoring



- Need housekeeping data
 - Halo -> background files and temperature log (for XR)
 - Leosphere -> spectra
- Monitor
 - Pointing angle -> same as for DCR
 - Background
 - Focus
 - Calibration
- Temperature impacts background (for XR)
 - Maybe focus

Doppler lidar monitoring - background



Calibration and monitoring activities



- Link to both CCRES and NFs
- Set of services
 - For each instrument
 - Each needs a small working group
 - Design
 - Create
 - Implement
- Responsibility
 - Report to NF
 - Report to CCRES

