Overlap Correction

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To-PROF and E-PROFILE teams

Overlap artefact
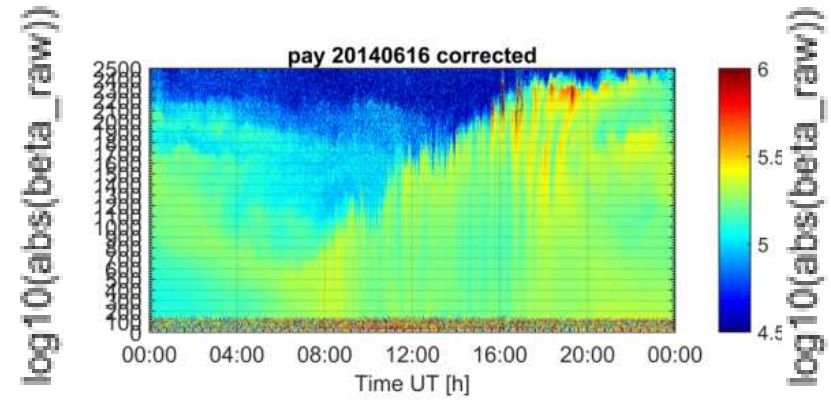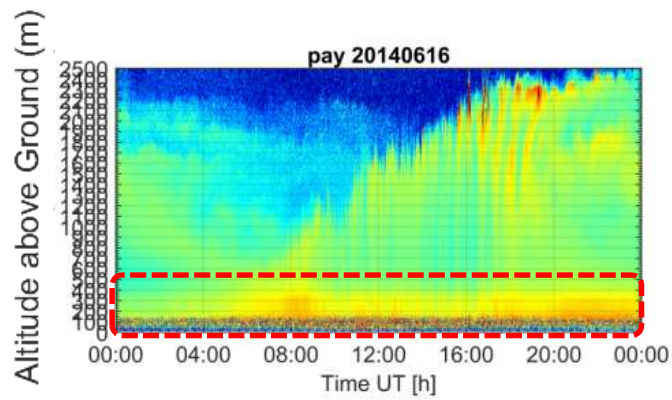

06/07/2015 23:00 to 23:59 UTC
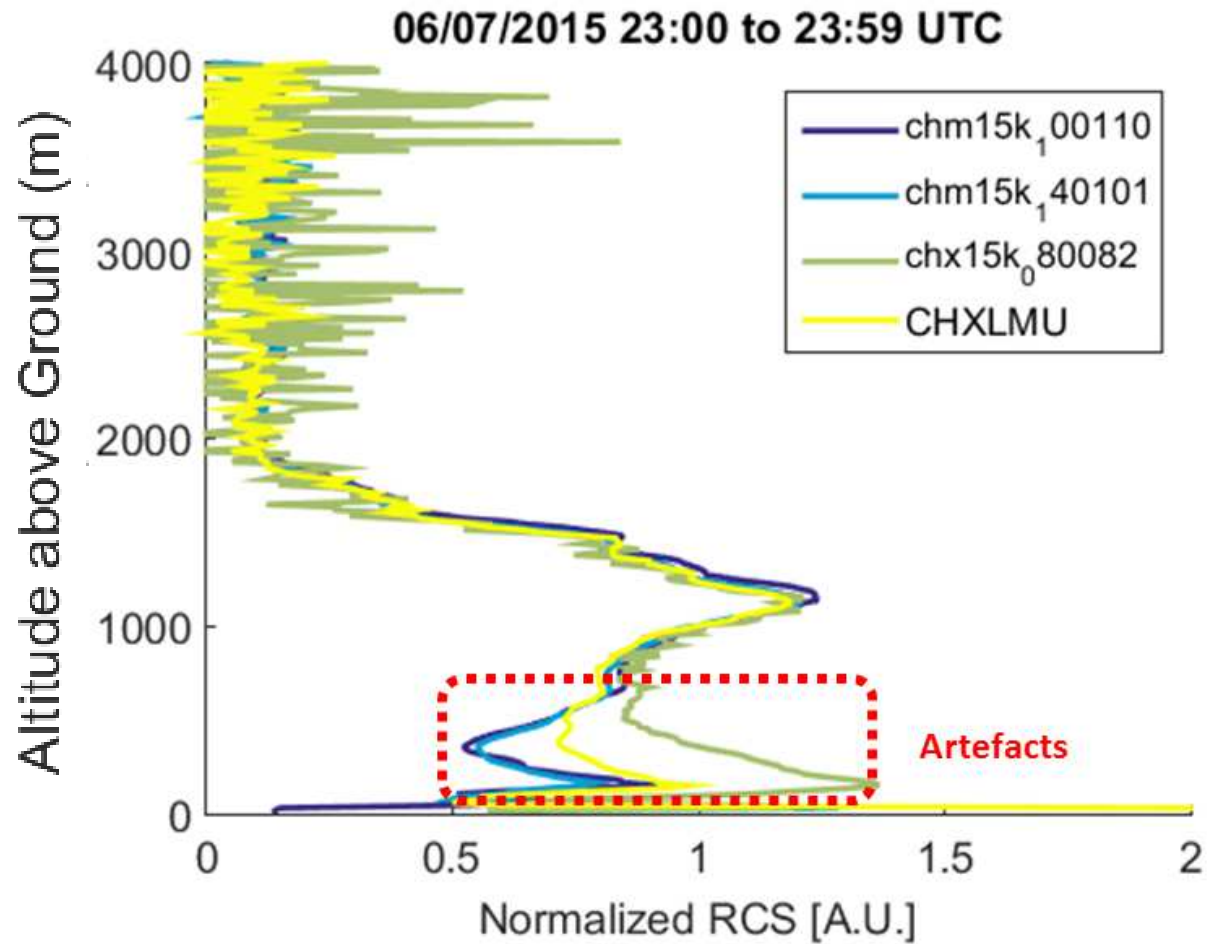
Artefacts visible at Lindenberg, Payerne, Kleine Scheidegg, Grenada, Palaiseau………
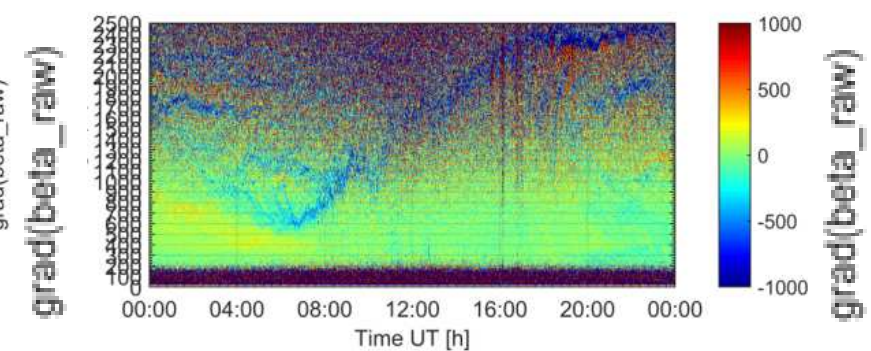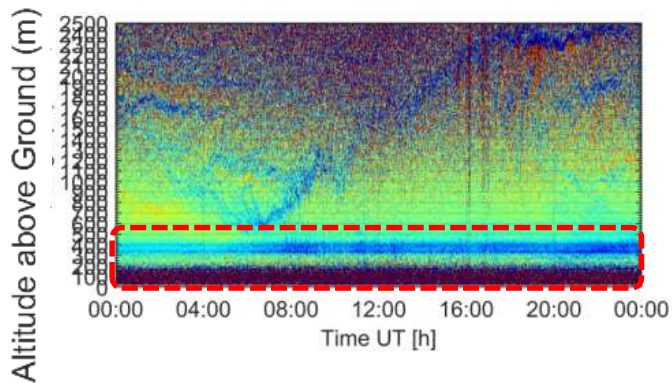
Principle

- Use vertical measurements when homogeneous

- Need an a-priori of the overlap function

- Automatic detection of homogeneous layers and quality checks

Overlap correction ©*Poltera*© method
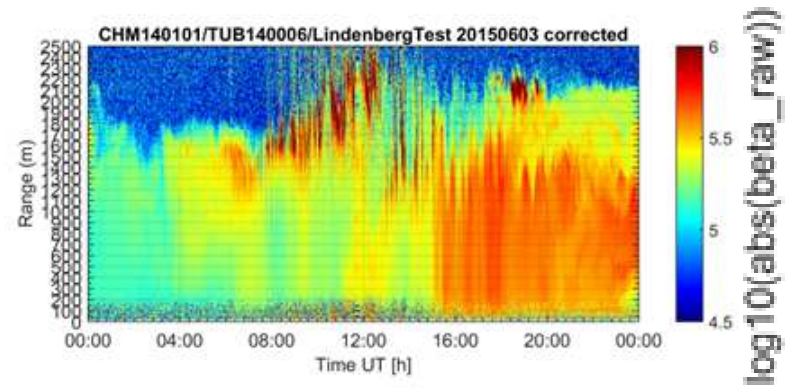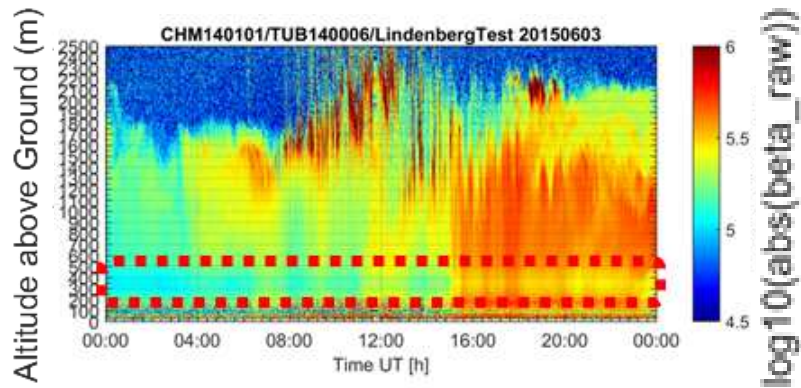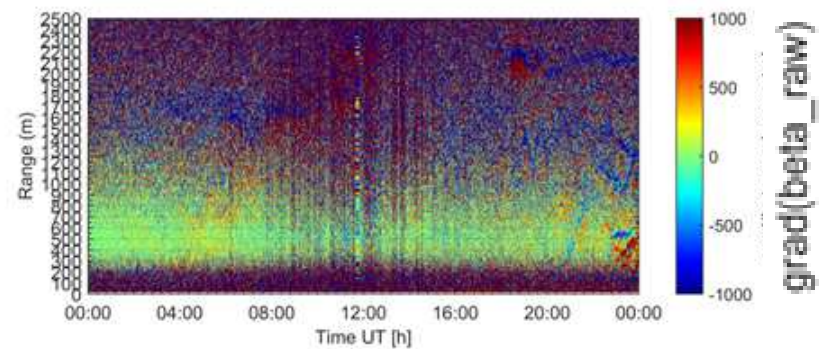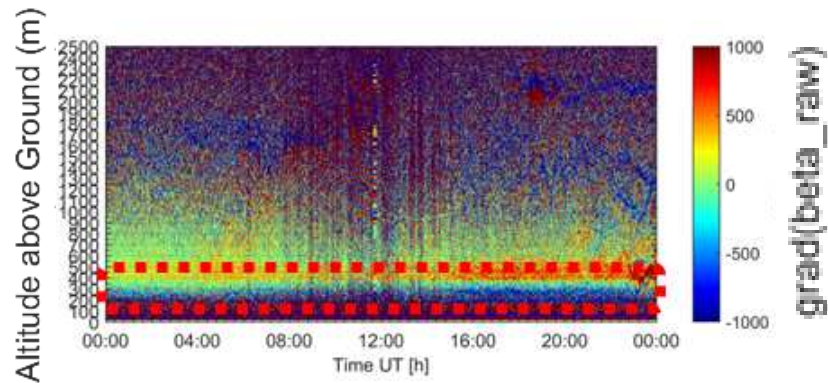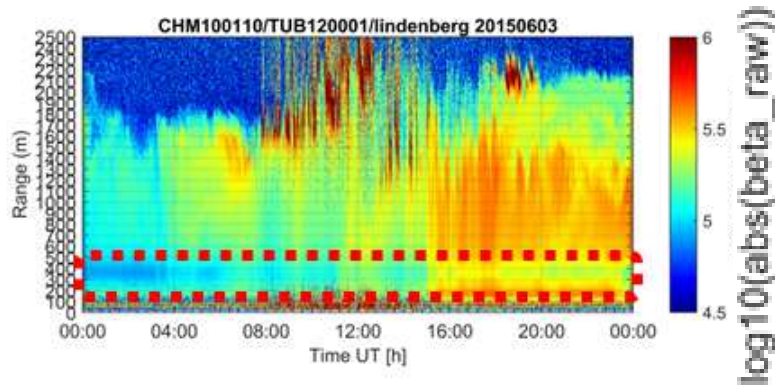# Example 1: CHM120106 at Payerne

Artefacts

Overlap correction ©*Poltera*© method
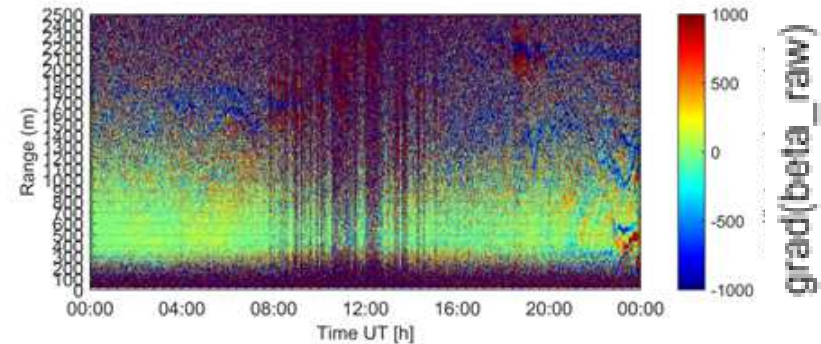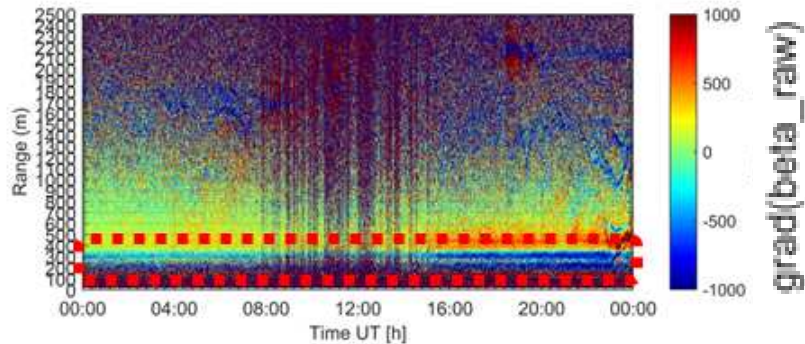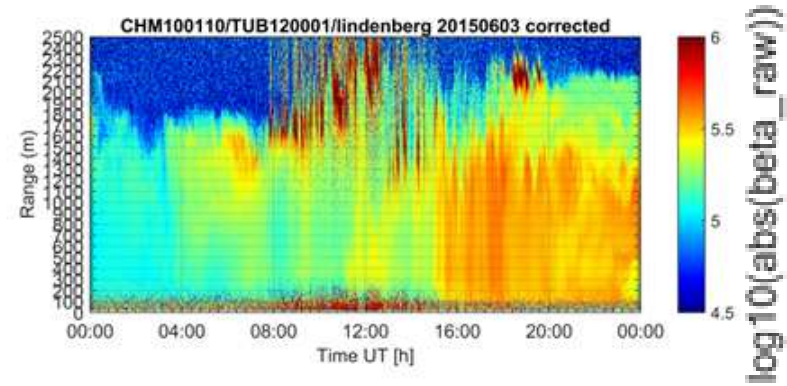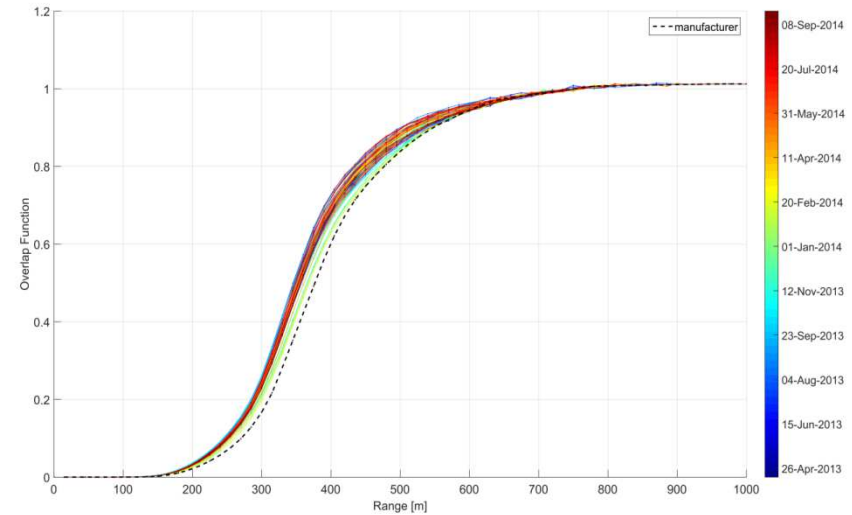# Example 2: CHM140101 at Ceilinex
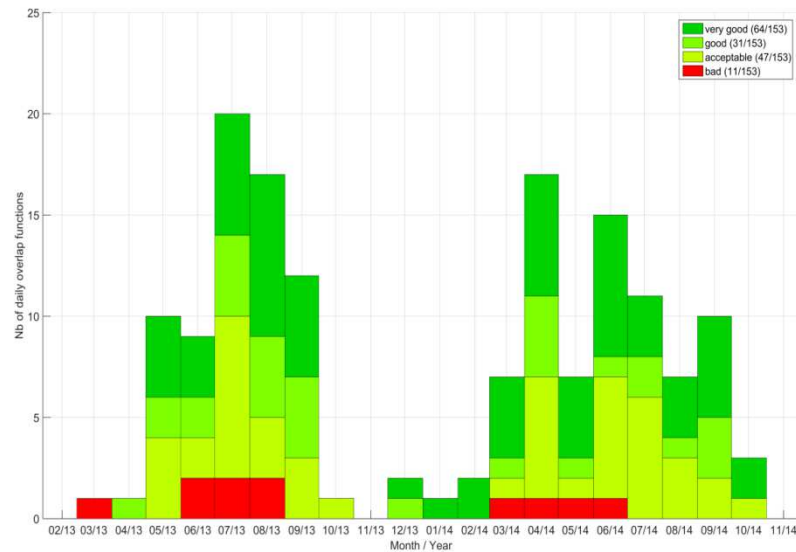

Artefacts

Overlap correction ©*Poltera*© method
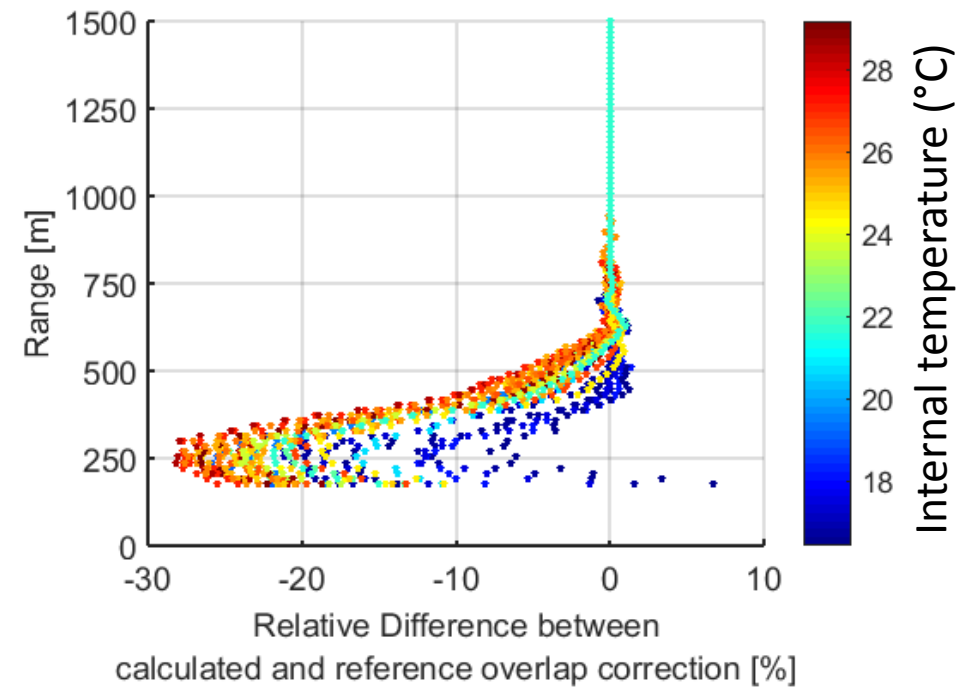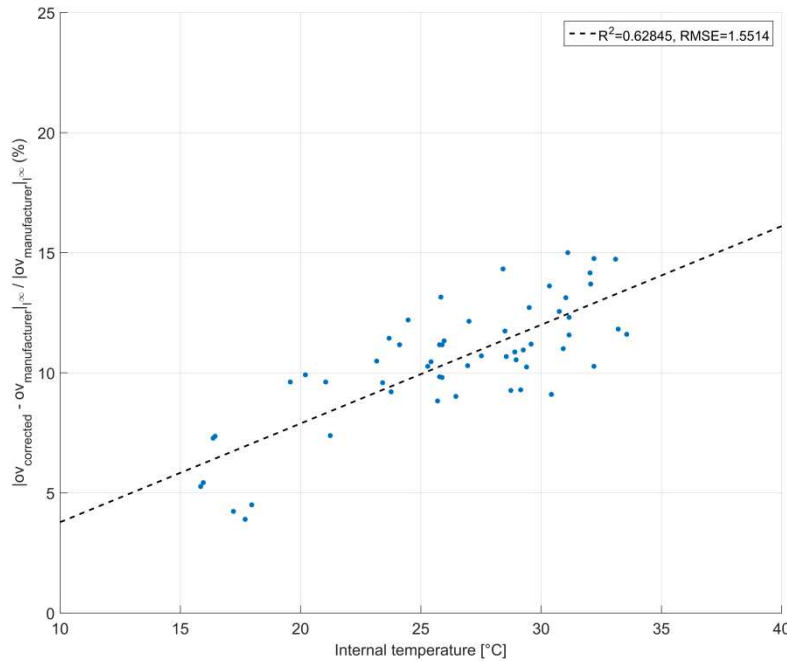# Example 3: CHM100110 at Ceilinex

Payerne study over 1.5 year

- Over 1.5 year, 153 detections.
- More than 90% of the retrieved overlap correction functions improved the signal
- 62% removed all visible artefacts

Temperature influence

For Payerne: temperature influences the overlap function

Conclusions

- Correction of overlap artefacts is possible under a large variety of atmospheric conditions

- Overlap changes over time and needs to be corrected regularly

- Horizontal measurements might modify your overlap

Perspectives

- Influence on PBL detection?

- Improve automatic quality check to decrease the number of imperfect corrections

- Publication in preparation