



# PBL height estimation by ceilometer CL51

Software comparison - preliminary results from CeiLinEx 2015

## Used data and methods

### Ceilometer CL-51 from CzechGlobe

- BL-VIEW (Vaisala)
- STRAT version 01.04

### Radiosonde measueremet

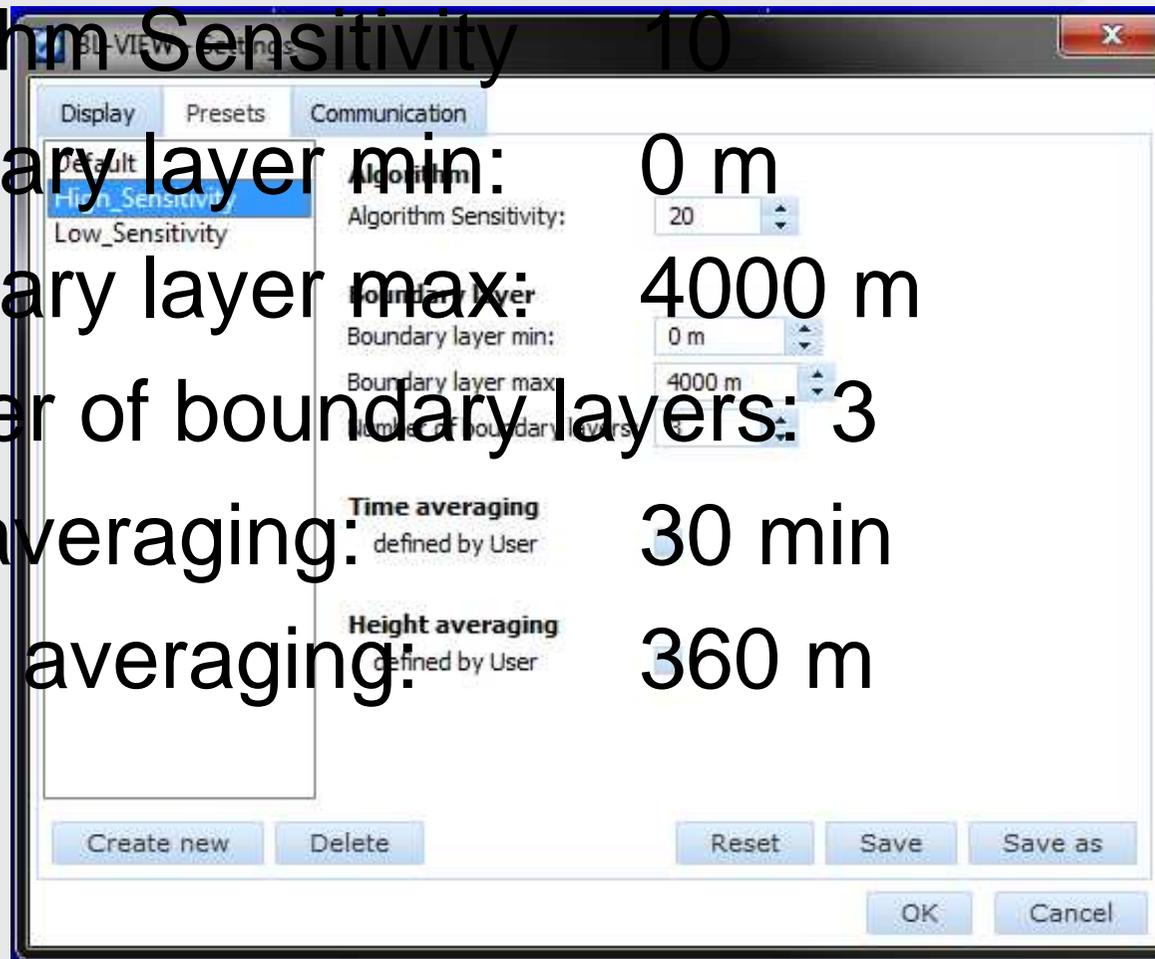
- Estimation of PBL height by calculation of Richardson number (critical value 0.21)

$$R_{ib}(z) = \frac{g(z - z_0)[\theta(z) - \theta(z_0)]}{\theta(z)[u(z)^2 + v(z)^2]}$$

### Quicklooks from CeiLinEx web page

# BL-VIEW setting

- Algorithm Sensitivity: 10
- Boundary layer min: 0 m
- Boundary layer max: 4000 m
- Number of boundary layers: 3
- Time averaging: 30 min
- Height averaging: 360 m



# STRAT setting

- More options
- Almost all in default setting

max MLD during Night

1500m

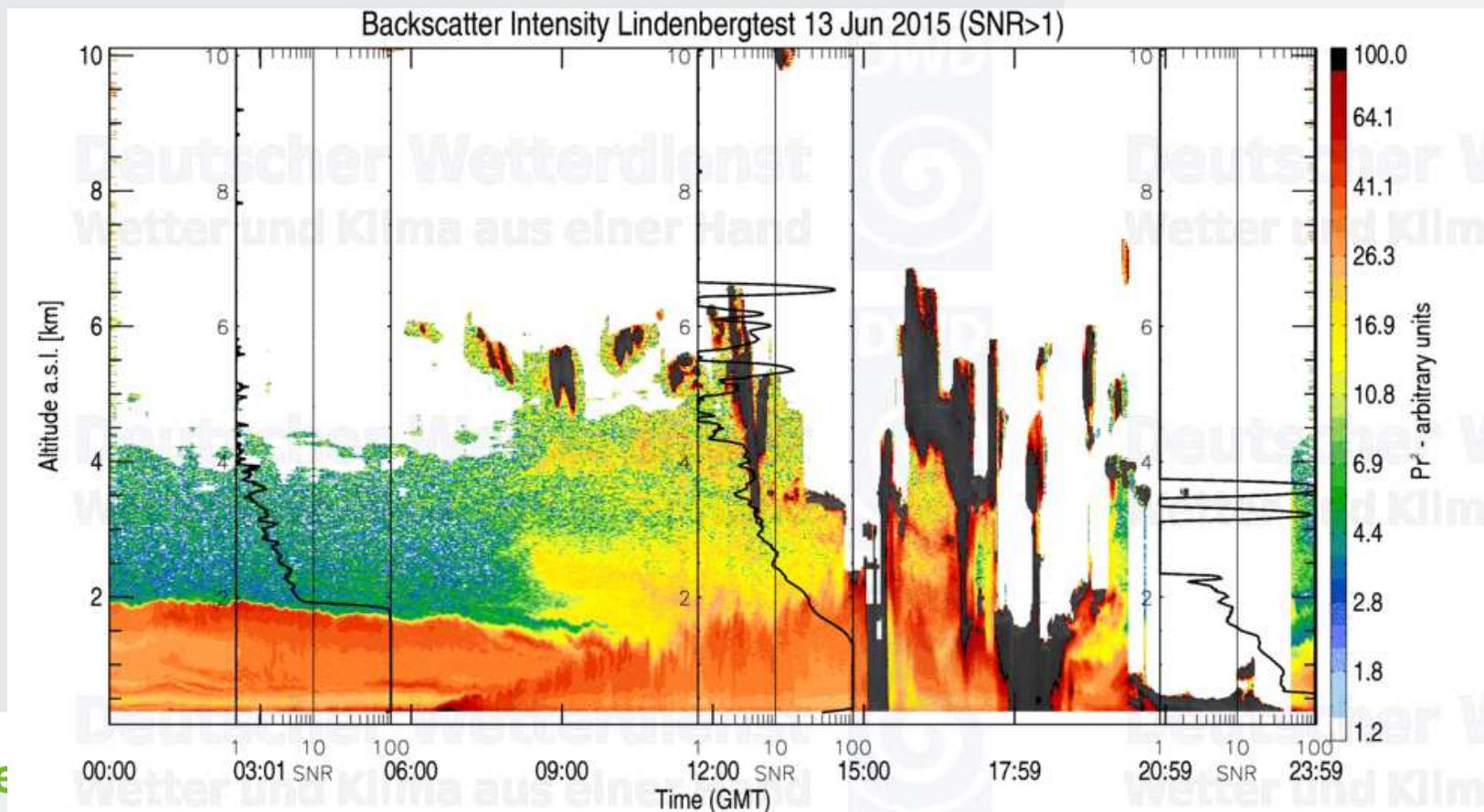
max MLD during Day

3500m

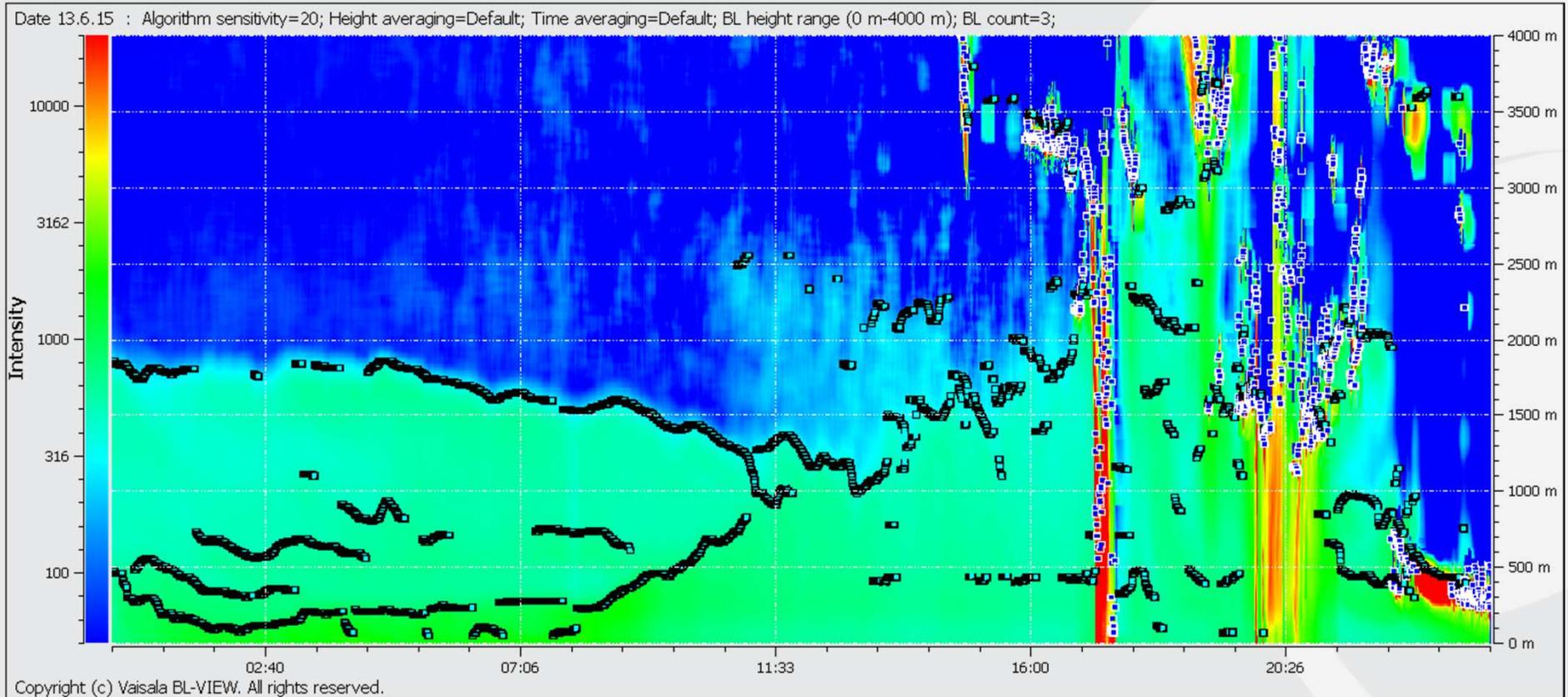
min MLD during Night and Day 50m

# 13th June – Description

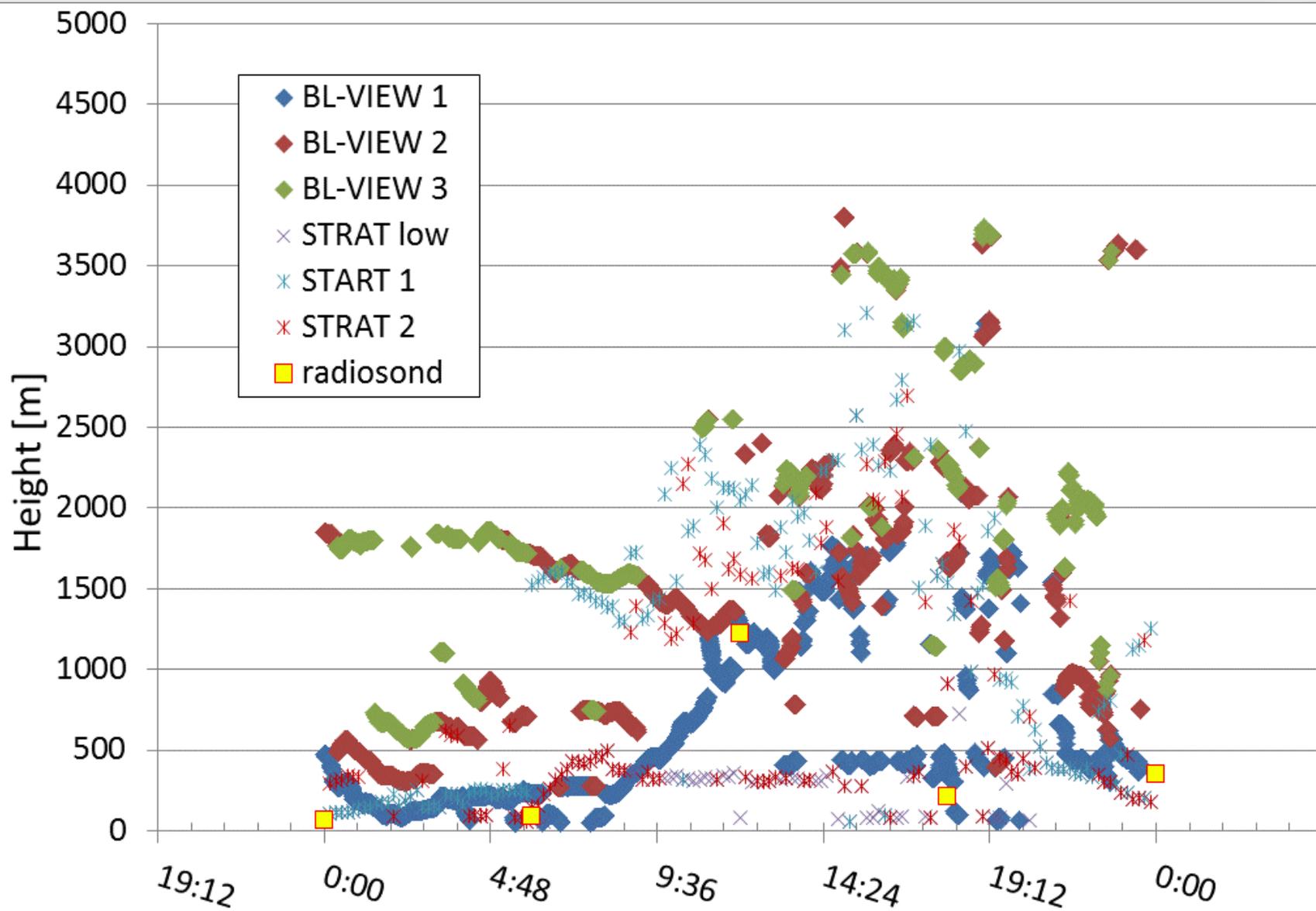
Hot day; strong aerosol load in free troposphere (2-3.5km - probably Sahara dust); showers in the afternoon



# 13th June - BL-VIEW output

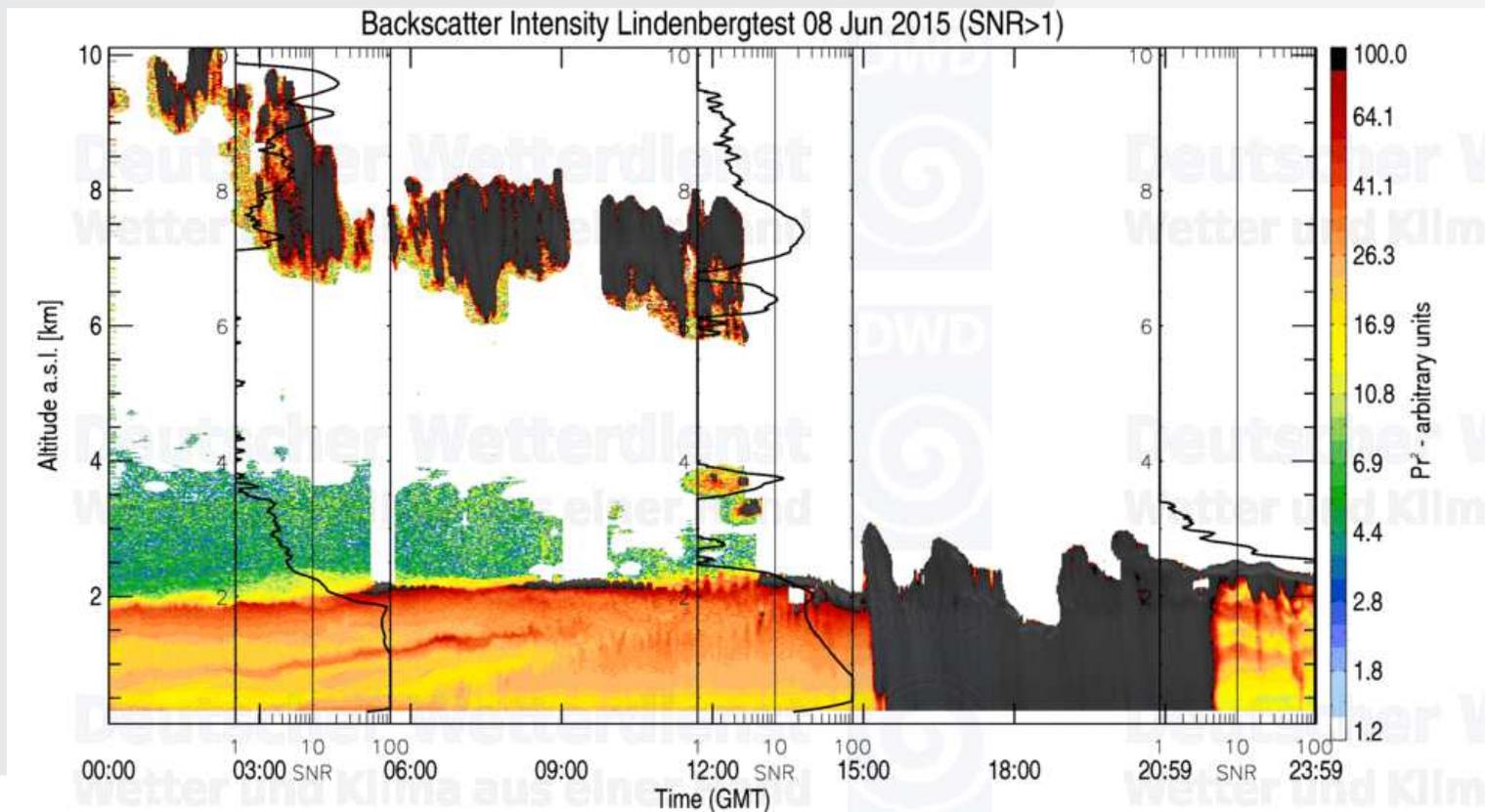


# 13th June – Results



# 8th June – Description

Till 15UTC scattered AC- and broken CI/CS-cloud;  
After 15UTC low cloud, probably ST & NS, and  
some rain



# 8th June – Results

