Karlsruhe Institute of Technology

Boundary layer heights from Doppler lidar using aerosol backscatter and wind data

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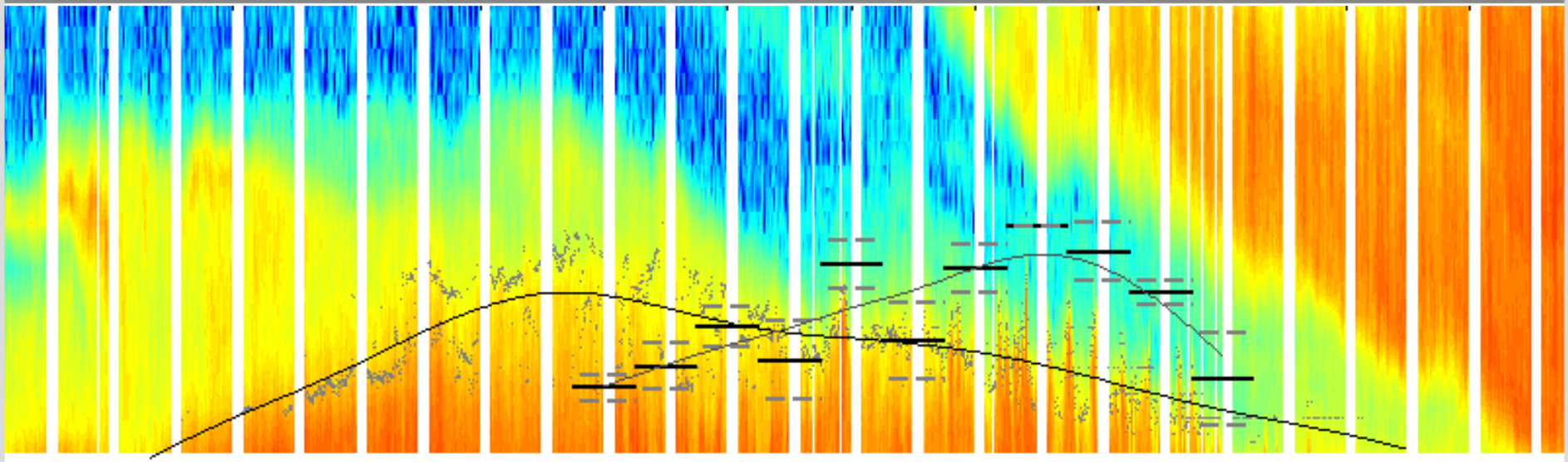
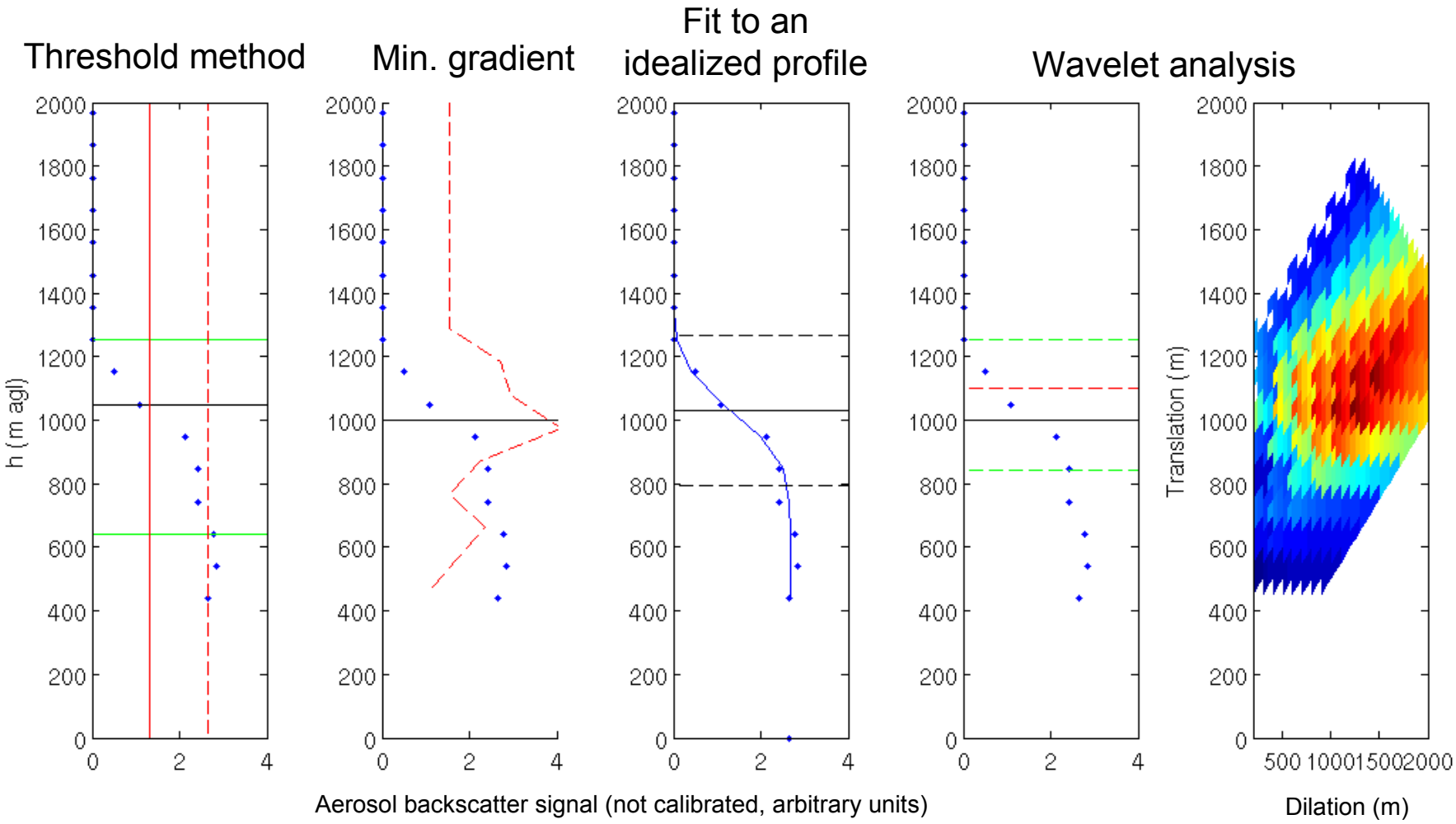


What is our demand for a todays BLH detection method?

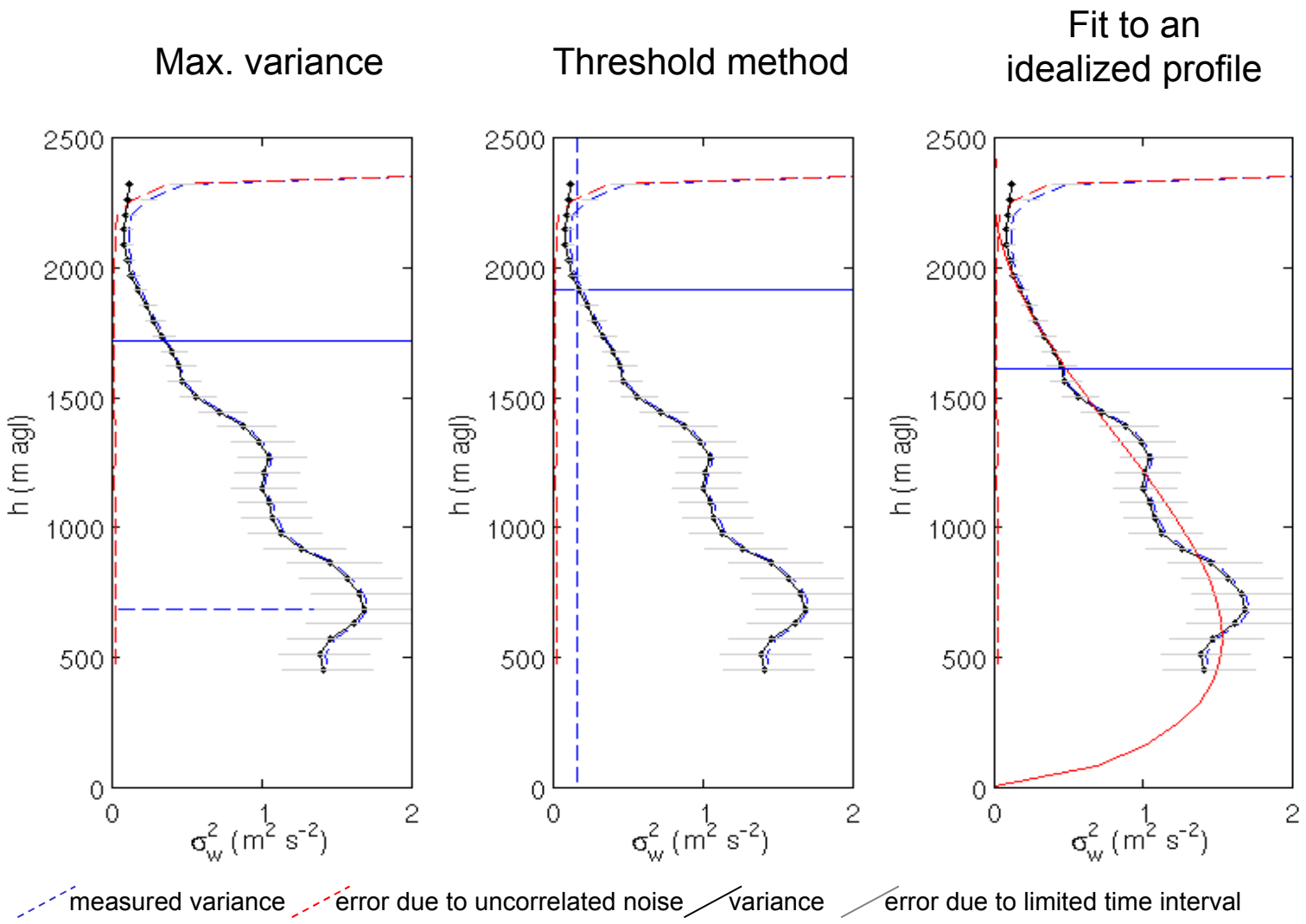
- Reliability
- Objective determination
- High spatial and temporal resolution
- Operationalization and robustness

Doppler lidar gives the opportunity combining an high resolution aerosol measurement with a turbulence measurement

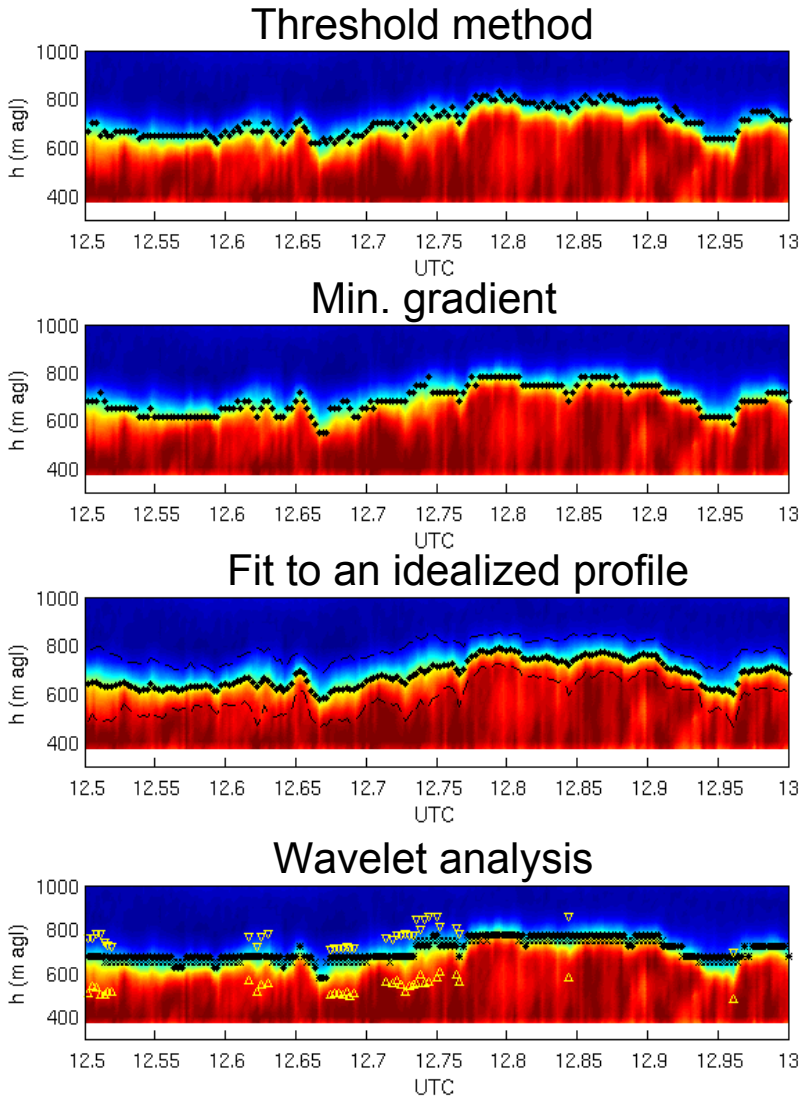
BLH Determination using aerosol backscatter

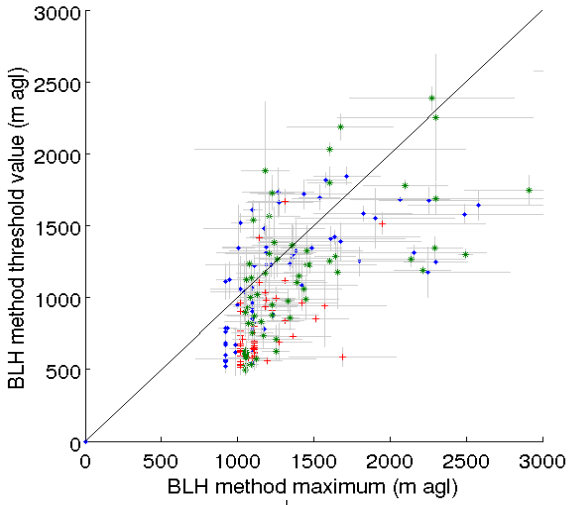


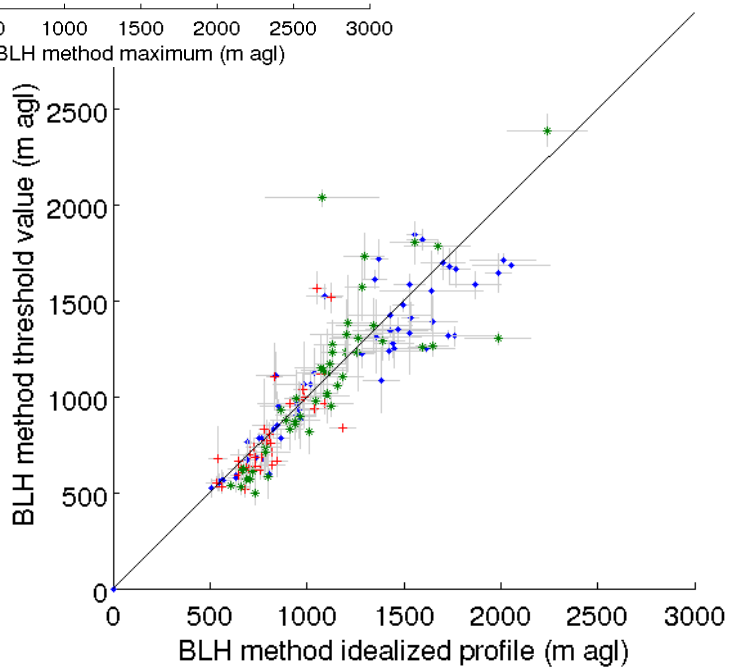
BLH Determination using vertical velocity variance



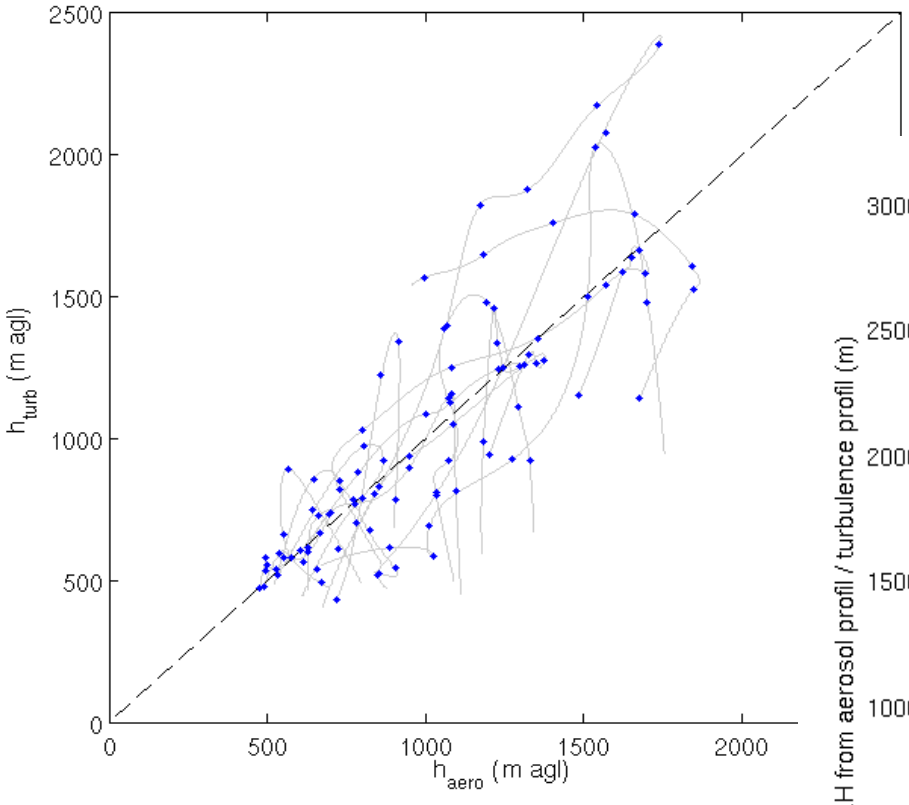
Comparison methods within one concept

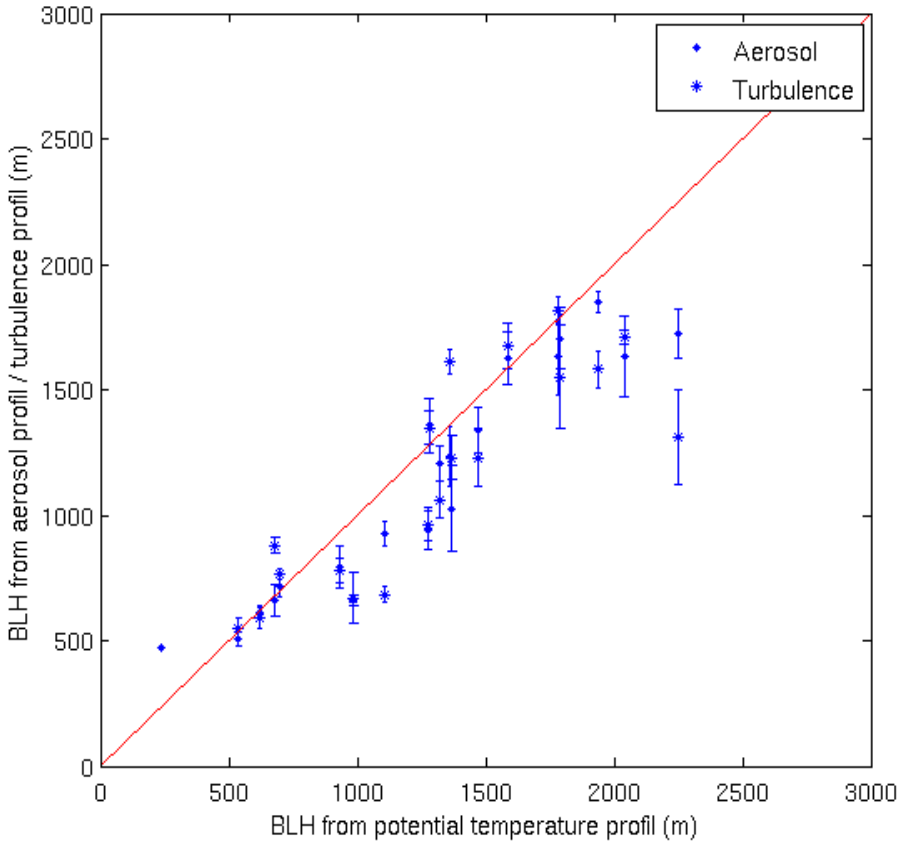




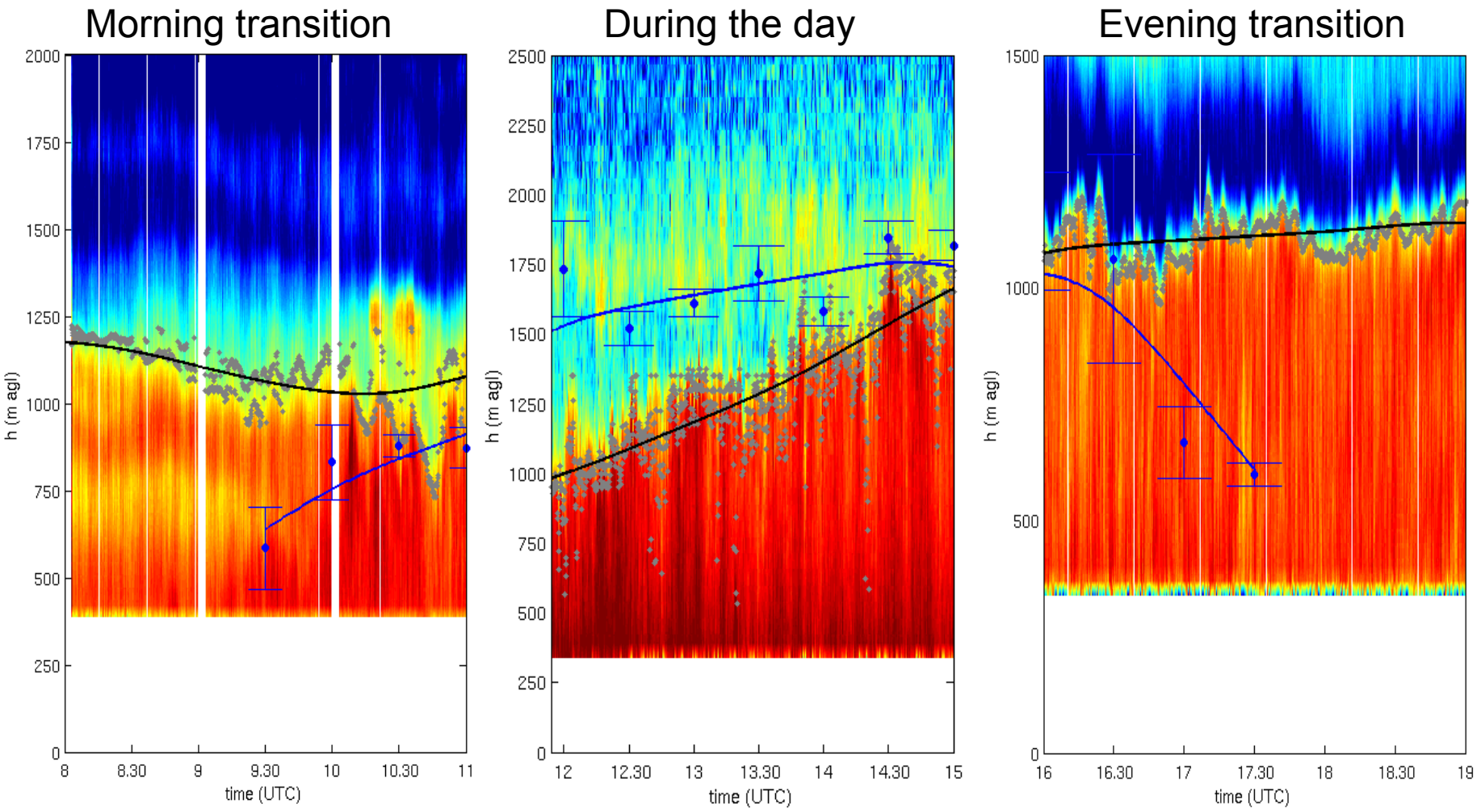


Comparison methods among the two concepts



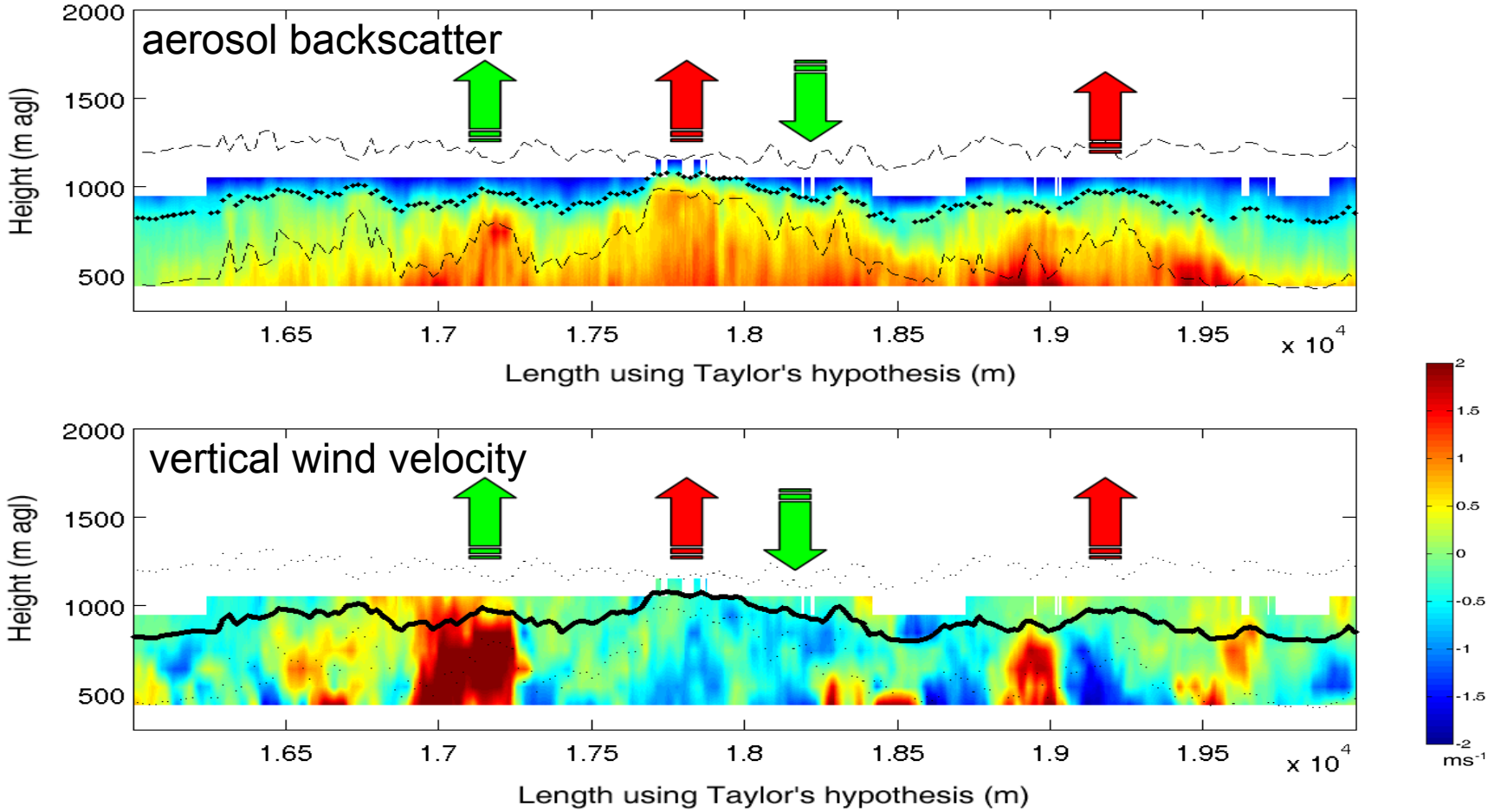


Comparison methods among the two concepts

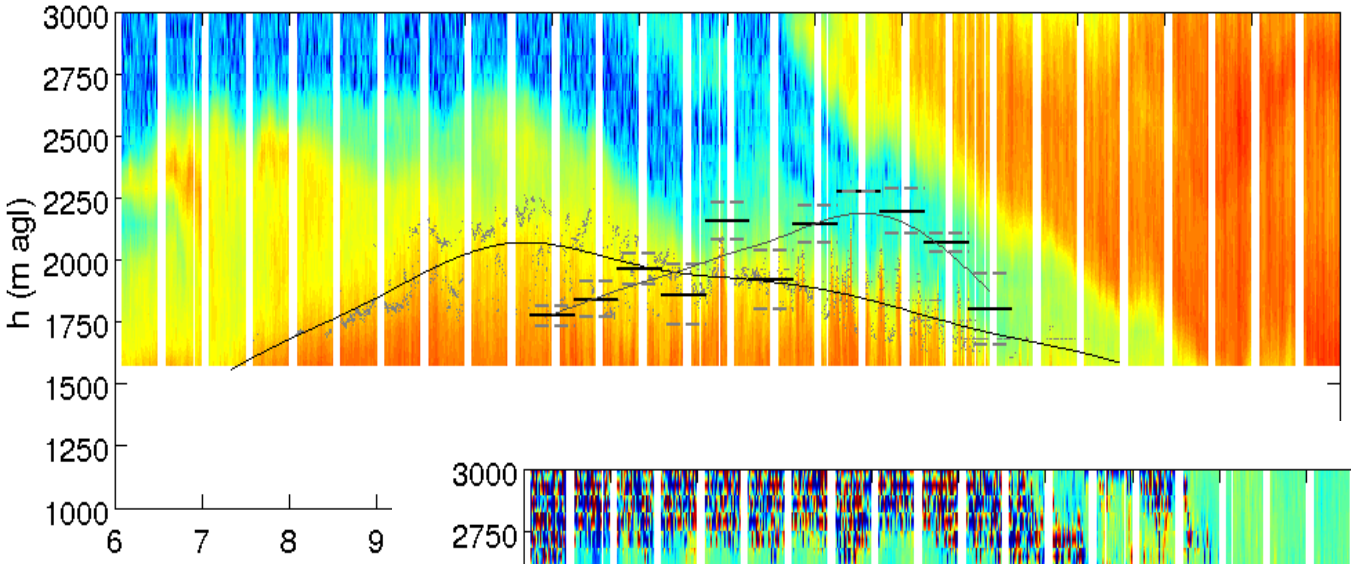


Going a step further – an example of use

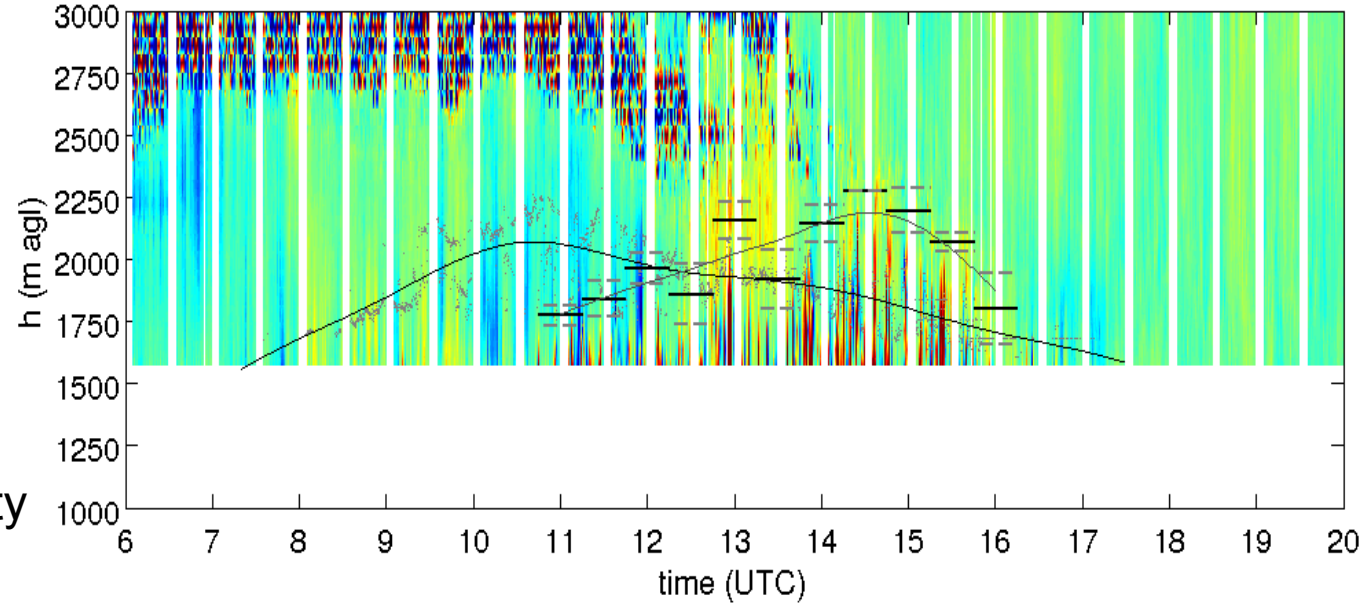
Small-scale BLH variations and their correlation with the current vertical wind field



So what is the boundary layer height?



aerosol backscatter



vertical wind velocity