



## **Comparison of Doppler Lidar Wind Measurements versus Tower and Sodar Data in the Lower Atmospheric Boundary Layer**

Frank Beyrich (1), Carola Detring (2), Eileen Päschke (1), and Udo Rummel (1)

(1) Deutscher Wetterdienst, Meteorologisches Observatorium Lindenberg, Tauche - OT Lindenberg, Germany  
(frank.beyrich@dwd.de), (2) Freie Universität Berlin, Institut für Meteorologie, Berlin, Germany

Over the last decade, infrared Doppler lidars became an attractive tool for wind measurements in the lower atmosphere. Several commercial systems are available on the market and have been demonstrated to provide reliable wind profile data for a variety of applications. The Meteorological Observatory Lindenberg – Richard-Aßmann-Observatory (MOL-RAO) of the German Meteorological Service (Deutscher Wetterdienst, DWD) started to assess the operational characteristics of wind lidars about four years ago. Statistical analysis of measurements over more than one year showed excellent agreement between Doppler wind lidar and wind profiler radar data over the height range between about 500 m and several kilometers above ground (Päschke et al., Atmos. Meas. Techn. 2015). In a second step, analysis focused on wind profile measurements in the lower 400 m of the atmosphere by comparing Doppler wind lidar versus tower and sodar measurements. The presentation will discuss statistical results from a one-year data set. In addition to an overall comparison, the dependence of the results on wind speed, wind direction and stability of the lower boundary layer has been analysed.