High resolution measurements of water vapor and aerosol fields with UHOH scanning DIAL system at Hornisgrinde

Sandip Pal, Andreas Behrendt, Max Schiller, Andrea Riede, and Volker Wulfmeyer

Institute of Physics and Meteorology, University of Hohenheim, 70593 Stuttgart, Germany. Email: sandip@uni-hohenheim.de

Introduction

Within this contribution, we present measurements of the fields of water vapor mixing ratio and aerosol backscatter made with the UHOH water vapor DIAL system during COPS from June to August 2007 on top of Hornisgrinde (highest peak in the Northern Black Forest, at an elevation of 1161 m above sea level). Differential absorption lidar (DIAL) allows to profile the atmospheric water vapor number density with higher resolution and accuracy than any other remote sensing technique. The UHOH DIAL system provides the profiles of water vapor number density with temporal and spatial resolution of 10 s and 15 m, respectively. For the data presented here, the signals of two telescopes with a diameter of 80 and 20 cm, respectively, have been used.

Measurement examples during COPS 2007

- IOP 8b (15 July 2007)
- IOP 9c (20 July 2007)
- IOP 11a (25 July 2007)
- IOP 11b (26 July 2007)
- IOP 13 a-b (1-2 Aug 2007)

Instrument synergy

- 29 Aug 2007: A view to the COPS supersite on Hornisgrinde. The water vapor DIAL, RH, and temperature sensing instruments were collocated at this site.

- 16 July 2007 (EUFAR activity): A view to the COPS supersite on Hornisgrinde. The water vapor DIAL, RH, and temperature sensing instruments were collocated at this site.

Intercomparison: UHOH DIAL and RS

- Acknowledgement

- Fig. 1: View to the COPS supersite on Hornisgrinde. The water vapor DIAL, RH, and temperature sensing instruments were collocated at this site.

Acnowledgement

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