



A scanning Raman lidar system to measure water vapor and temperature simultaneously in the atmospheric boundary layer

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A new generation high resolution scanning Raman lidar has been developed at the Swiss Federal Institute of Technology at Lausanne (EPFL) to measure at unprecedented resolution water vapor and temperature profiles simultaneously in the atmospheric boundary layer (ABL). The lidar operates in the solar blind region with a high energy and high repetition rate laser, a multi-faced telescope system and two unique polychromators. Temperature and water vapor are measured in the ABL with constant signal to noise at 1.5 m and 1 second resolution. System description details, calibration procedures and results are discussed in this presentation. First applications include high resolution observations of the diurnal cycle of the atmospheric boundary layer evolution near the earth's surface, including day and night time transitions, first scanning measurements over a grape canopy and comparisons with other instruments like sonic anemometer, licor and tethered balloon.