SIMULTANEOUS WATER VAPOR AND TEMPERATURE NIGHTTIME OBSERVATIONS ABOVE THE ALETCH GLACIER (SWITZERLAND) WITH RAMAN LIDAR

Ioan Balin (1), I. Serikov, Remo Nessler (1), G. Larcheveque, Valentin B. Simeonov (1), Bertrand Calpini (2), Marc B. Parlange (1,4), S. Bobrovnikov, Yuri F. Arshinov (3), Hubert van den Bergh (1)

(1) Swiss Federal Institute of Technology, Lausanne, (2) Swiss Meteo, Payerne, (3) Institute of Atmospheric Optics, Siberian Branch of Russian Academy of Sciences, Tomsk, (4) Johns Hopkins University, Baltimore (jean.balin@epfl.ch)

Horizontal and vertical simultaneous profiles of atmospheric temperature and humidity data were collected in July 2002, at the Swiss Jungfraujoch High Alpine Observatory (3600 m) over the Aletch Glacier. The measurements were collected between 10:00 pm and 4:00 am with a spatial resolution of up to 7.5 m for water vapor and 30 m for the temperature over half an hour. The similarity of temperature and humidity is explored using a variety of statistical tools, including structure functions and wavelets. The influence of the complex high alpine terrain on temperature and humidity is discussed. In addition, aerosol backscatter extinction profiles were obtained at two wavelengths (355 nm, 532 nm.)