



## **Upper tropospheric humidity measurements by Raman lidar above Payerne, Switzerland, in the frame of NDACC**

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The Raman lidar for Meteorological Observations, RALMO, is a Raman lidar for water vapor, temperature and aerosol profiling deployed at the aerological station of Payerne, Switzerland. The instrument is fully automatic and operational since beginning of 2008 performing quasi continuous day and nighttime measurements with a temporal resolution of 30 min. Since 2013 the water vapor measurements are also performed in the frame of NDACC. In this study the data set has been reprocessed taking only nighttime and clear sky data using long integration times of several hours. In this configuration water vapor mixing ratio can be retrieved up to the tropopause with an uncertainty of 10 % or better. Comparisons with radiosoundings reveal that the lidar agrees with the RS92 and SnowWhite hygrometers within 20 % up to 12 km in terms of water vapor mixing ratio. The validation results and the 6 year time series of upper tropospheric humidity will be presented and discussed.