Water vapor isotope experiment was conducted at Niwot Ridge site, Colorado, US (40.03N, 105.55W) from Jan 2011 to Dec 2014.

1. Time stamps

Data files are stored in hourly resolutions using start and end time stamps (YYYYMMDDHHmm).

2. Data format

Data files are CSV formatted.

3. Time zone convention

Time is reported in UTC.

4. Missing data

Missing data is replaced with -9999.

5. Variable definitions

Column	Description	Unit	Equipment	Height (m)	Additional description
Column 1	Start time	–	–	–	UTC
Column 2	End time	–	–	–	UTC
Column 3	Water mixing ratio	ppmv	Picarro L2120-i	24.3	–
Column 4	Water vapour isotopic ratio (18O)	per mil	Picarro L2120-i	24.3	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression of water vapour concentration
Column 5	Standard deviation of 18O	per mil	Picarro L2120-i	24.3	Hourly
Column 6	Water vapour isotopic ratio (D)	per mil	Picarro L2120-i	24.3	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression of water vapour concentration
Column 7	Standard deviation of D	per mil	Picarro L2120-i	24.3	Hourly

Column 8	Air temperature	Celsius (°C)	HMP-35D	21.5	–
Column 9	Relative humidity	<=1	HMP-35D	21.5	–
Column 10	Air pressure	kPa	PTB-101B	12	–
Column 11	Precipitation	mm	USCRN Precip Data	–	–
Column 12	Net radiation	W/m2	REBS Q-7.1	25.5	–
Column 13	Wind speed	m/s	CSAT3	21.5	–
Column 14	Wind direction	°C	CSAT3	21.5	–
Column 15	Air temperature	Celsius (°C)	–	2	ERA5
Column 16	Relative humidity	<=1	–	2	ERA5
Column 17	Air pressure	kPa	–	2	ERA5
Column 18	Precipitation	mm	–	–	ERA5
Column 19	Net radiation	W/m2	–	–	ERA5
Column 20	Wind speed	m/s	–	10	ERA5
Column 21	Wind direction	°C	–	10	ERA5

6. Reference papers

Berkelhammer, M., Noone, D., Wong, T.E., Burns, S.P., Knowles, J.F., Kaushik, A., Blanken, P.D. and Williams, M.W., 2016. Convergent approaches to determine an ecosystem's transpiration fraction. *Global Biogeochemical Cycles*.

7. Site contact

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