Water vapor isotope experiment was conducted at Rosemount site, Rosemount, USA (44.70N, 93.08W). The site includes two sets: Soybean (G21, Apr 2007 - Oct 2007) and tall tower (Jan 2010- Dec 2013).

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

Tall Tower Data (Rosemount, Minnesota KCMP Tall Tower):

Column	Description	Unit	Equipment	Height (m)	Additional description
Column 1	Start time	–	–	–	UTC
Column 2	End time	–	–	–	UTC
Column 3	Water mixing ratio	ppmv	Campbell TG A-200	180	–
Column 4	Water vapour isotopic ratio (18O)	per mil	Campbell TG A-200	180	Normalized to V-SMOW; Humidity dependence correlation: Dripper system
Column 5	Standard deviation of 18O	per mil	Campbell TG A-200	180	Hourly
Column 6	Water vapour isotopic ratio (D)	per mil	Campbell TG A-200	180	Normalized to V-SMOW; Humidity dependence correlation: Dripper system
Column 7	Standard deviation of D	per mil	Campbell TG A-200	180	Hourly

Column 8	Air temperature	Celsius (°C)	HMP45C	3.0	–
Column 9	Relative humidity	<=1	HMP45C	3.0	–
Column 10	Air pressure	kPa	HMP45C	3.0	–
Column 11	Precipitation	mm	TE525MM	-	–
Column 12	Net radiation	W/m2	CNR-1	3.7	–
Column 13	Wind speed	m/s	DA600-62AX	2.1	–
Column 14	Wind direction	°C	DA600-62AX	2.1	–
Column 15	Air temperature	Celsius (°C)	–	–	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	–	–	ERA5
Column 21	Wind direction	°C	–	10	ERA5

Soybean site Data (Rosemount, Minnesota Soybean site):

Column	Description	Unit	Equipment	Height (m)	Additional description
Column 1	Start time	–	–	–	UTC
Column 2	End time	–	–	–	UTC
Column 3	Water mixing ratio	ppmv	Campbell TG A-200	3	–
Column 4	Water vapour isotopic ratio (18O)	per mil	Campbell TG A-200	3	Normalized to V-SMOW; Humidity dependence correlation: Dripper system

Column 5	Standard deviation of 18O	per mil	Campbell TG A-200	3	Hourly
Column 6	Water vapour isotopic ratio (D)	per mil	Campbell TG A-200	3	Normalized to V-SMOW; Humidity dependence correlation: Dripper system
Column 7	Standard deviation of D	per mil	Campbell TG A-200	3	Hourly
Column 8	Air temperature	Celsius (°C)	HMP45C	3.0	G21
Column 9	Relative humidity	<=1	HMP45C	3.0	G21
Column 10	Air pressure	kPa	HMP45C	3.0	G21
Column 11	Precipitation	mm	TE525MM	–	G21
Column 12	Net radiation	W/m2	CNR-1	3.7	G21
Column13	Wind speed	m/s	DA600-62AX	2.1	G21
Column14	Wind direction	°C	DA600-62AX	2.1	G21
Column 15	Air temperature	Celsius (°C)	DA600-62AX	2.1	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	–	–	ERA5
Column 21	Wind direction	°C	–	10	ERA5

6. Reference papers

Griffis, T.J., Lee, X., Baker, J.M., Billmark, K., Schultz, N., Erickson, M., Zhang, X., Fassbinder, J., Xiao, W. and Hu, N., 2011. Oxygen isotope composition of evapotranspiration and its relation to C4 photosynthetic discrimination. Journal of Geophysical Research: Biogeosciences, 116(G1).

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transport, and isotope composition of water vapor in the planetary boundary layer. Atmospheric Chemistry and Physics, 16(8), pp.5139-5157.

7. Site contact

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