

Water vapor isotope experiment was conducted at the NEEM site in North-West Greenland (77.45 N, 51.05 W) during 178 days across the summer season field campaigns of May – Aug 2010, Jul – Aug 2011, and May – Aug 2012.

1. Time stamps

Data files are stored in daily resolutions using start and end time stamps (YYYYMMDD).

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	LGR 908-0004-0003 (2010 season) Picarro L1102-i (2011 and 2012 season).	1 meter (2010 season), 3 meters (2011 and 2012 season)	–
Column 4	Water vapour isotopic ratio (18O)	per mil	LGR 908-0004-0003 (2010 season) Picarro L1102-i (2011 and 2012 season).	1 meter (2010 season), 3 meters (2011 and 2012 season)	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression
Column 5	Standard deviation of 18O	per mil	LGR 908-0004-0003 (2010 season)	1 meter (2010 season), 3 meters	daily

			Picarro L1102-i (2011 and 2012 season).	(2011 and 2012 season)	
Column 6	Water vapour isotopic ratio (D)	per mil	LGR 908-0004-0003 (2010 season) Picarro L1102-i (2011 and 2012 season).	1 meter (2010 season), 3 meters (2011 and 2012 season)	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression
Column 7	Standard deviation of D	per mil	LGR 908-0004-0003 (2010 season) Picarro L1102-i (2011 and 2012 season).	1 meter (2010 season), 3 meters (2011 and 2012 season)	daily
Column 8	Air temperature	Celsius (°C)	–	–	–
Column 9	Relative humidity	<=1	–	–	–
Column 10	Air pressure	kPa	–	–	–
Column 11	Precipitation	mm	–	–	–
Column 12	Net radiation	W/m2	–	–	–
Column 13	Wind speed	m/s	–	–	–
Column 14	Wind direction	degree (°C)	–	–	–

6. Reference papers

Steen-Larsen, H. C., Johnsen, S. J., Masson-Delmotte, V., Stenni, B., Risi, C., Sodemann, H., Balslev-Clausen, D., Blunier, T., Dahl-Jensen, D., Ellehøj, M. D., Falourd, S., Grindsted, A., Gkinis, V., Jouzel, J., Popp, T., Sheldon, S., Simonsen, S. B., Sjolte, J., Steffensen, J. P., Sperlich, P., Sveinbjörnsdóttir, A. E., Vinther, B. M., and White, J. W. C.: Continuous monitoring of summer surface water vapor isotopic composition above the Greenland Ice Sheet, *Atmos. Chem. Phys.*, 13, 4815-4828, doi:10.5194/acp-13-4815-2013, 2013.

Steen-Larsen, H. C., C. Risi, M. Werner, K. Yoshimura, and V. Masson-Delmotte, Evaluating the skills of isotope-enabled general circulation models against in

situ atmospheric water vapor isotope observations, J. Geophys. Res. Atmos., 122, 246–263, 2017.

7. Site contact

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