

Water vapor isotope experiment was conducted at Karlsruhe site near Karlsruhe in central Europe (49.10°N, 8.44°E) from Jan 2012 to May 2013.

Data download: [Metafile](#), [Dataset](#)

The in-situ data we have measured during MUSICA are freely available at:

<http://share.lsd.fkit.edu/imk/asf/musica/INSITU/>

The users should also have a look on the webpage for updates:

<http://www.imk-asf.fkit.edu/english/2746.php>

The data have been measured in the framework of the MUSICA project and the users should add a respective acknowledgement and respect the general data policy as attached in dataset file

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	28 m	-
Column 4	Water vapour isotopic ratio (18O)	per mil	Picarro L2120-i	28 m	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression

Column 5	Standard deviation of 18O	per mil	Picarro L2120-i	28 m	Hourly
Column 6	Water vapour isotopic ratio (D)	per mil	Picarro L2120-i	28 m	Normalized to V-SMOW; Humidity dependence correlation: Non-linear regression
Column 7	Standard deviation of D	per mil	Picarro L2120-i	28 m	Hourly
Column 8	Air temperature	Celsius (°C)	Mirror hygrometer	30 m	Meteolabor Switzerland
Column 9	Relative humidity	<=1	HMP-45A	-	-
Column 10	Air pressure	kPa	-	-	IMK-TRO
Column 11	Precipitation	mm	-	-	IMK-TRO
Column 12	Net radiation	W/m2	-	-	IMK-TRO
Column 13	Wind speed	m/s	-	-	IMK-TRO
Column 14	Wind direction	degree (°C)	-	-	IMK-TRO
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	-	-	ERA5
Column 21	Wind direction	°C	-	10	ERA5

6. Reference papers

Christner, E., Kohler, M., and Schneider, M.: The influence of snow sublimation and meltwater evaporation on δD of water vapor in the atmospheric boundary layer of central Europe, *Atmos. Chem. Phys.*, 17, 1207-1225, <https://doi.org/10.5194/acp-17-1207-2017>, 2017.

7. Site contact

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