

Water vapor isotope experiment was conducted at Izana Observatory, Canary Islands, Spain (28.3N, 16.5W) from Mar 2012 to Mar 2015.

The in-situ data 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.kit.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	30	-
Column 4	Water vapour isotopic ratio (18O)	per mil	Picarro L2120-i	30	Normalized to V-SMOW; Humidity dependence correlation: No
Column 5	Standard deviation of 18O	per mil	Picarro L2120-i	30	Hourly

Column 6	Water vapour isotopic ratio (D)	per mil	Picarro L2120-i	30	Normalized to V-SMOW; Humidity dependence correlation: No
Column 7	Standard deviation of D	per mil	Picarro L2120-i	30	Hourly
Column 8	Air temperature	Celsius (°C)	Rotronic	30	-
Column 9	Relative humidity	<=1	Rotronic	30	-
Column 10	Air pressure	kPa	Setra 470	30	-
Column 11	Precipitation	mm	-	-	-
Column 12	Net radiation	W/m2	Kipp & Zonen CM-5 and CM-11	-	-
Column 13	Wind speed	m/s	Thies Sonic anemometer	30	-
Column 14	Wind direction	degree (°C)	Thies Sonic anemometer	30	-
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

González, Y., Schneider, M., Dyroff, C., Rodríguez, S., Christner, E., García, O. E., Cuevas, E., Bustos, J. J., Ramos, R., Guirado-Fuentes, C., Barthlott, S., Wiegele, A., and Sepúlveda, E.: Detecting moisture transport pathways to the subtropical North Atlantic free troposphere using paired H₂O- δ D in situ measurements, *Atmos. Chem. Phys.*, 16, 4251-4269, <https://doi.org/10.5194/acp-16-4251-2016>, 2016.

7. Site contact

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