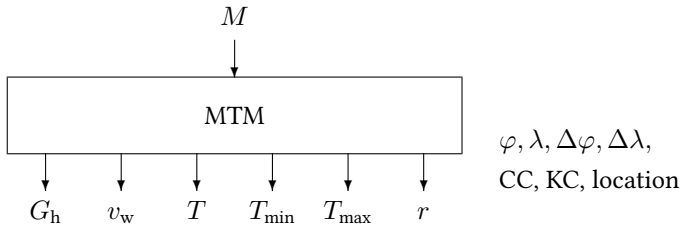
Block MTM

The MTM block returns monthly mean values of meteorological data from the INSEL weather database (data/mtm/weather_stations.fb.bin). Missing data is NaN.





Name	MTM
Function	em0018
Inputs	1
Outputs	9
Parameters	0
Strings	1
Group	S

Inputs

1 Month $M \in [1, 12]$

Outputs

1 Global radiation G_h / W m^{-2} on a horizontal plane
2 Wind speed v_w / m s^{-1}
3 Ambient temperature T / °C
4 Minimum ambient temperature $T_{a,min}$ / °C
5 Maximum ambient temperature $T_{a,max}$ / °C
6 Rain / mm
7 Annual mean ambient temperature / °C
8 Maximum ambient temperature difference / °C
9 Relative humidity

Parameters

None

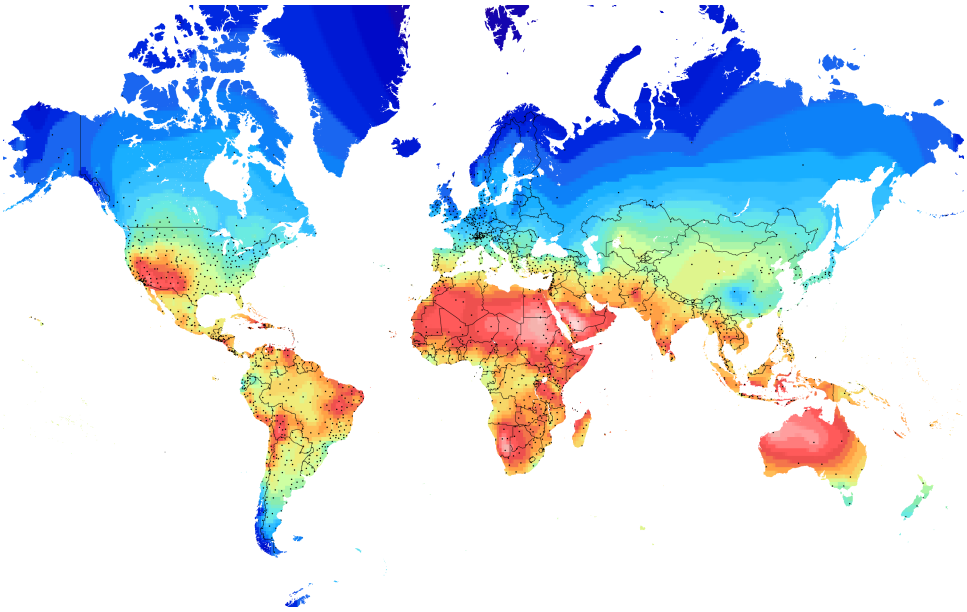
Strings

1 Name of location

Description

The MTM database provides long-term monthly mean values of the most important climatological parameters like global irradiance, ambient temperature etc. The image below shows the interpolated mean annual irradiance data distribution on a horizontal surface as stored for about 2 000 locations worldwide.

Most locations hold long-term means from 1970 to 1990. German locations hold means from 2006 to 2025, calculated from DWD's HOSTRADA data, and include wind speeds but no precipitation. Values which are missing in the database (e.g. wind speed or humidity for many locations) are returned as NaN.

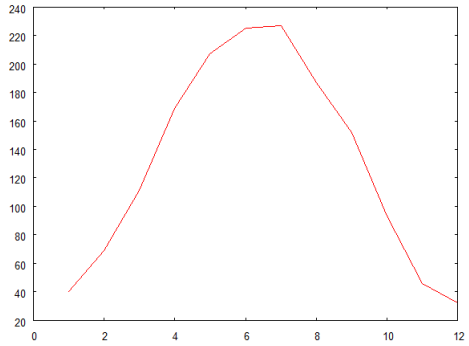


mtm.vseit

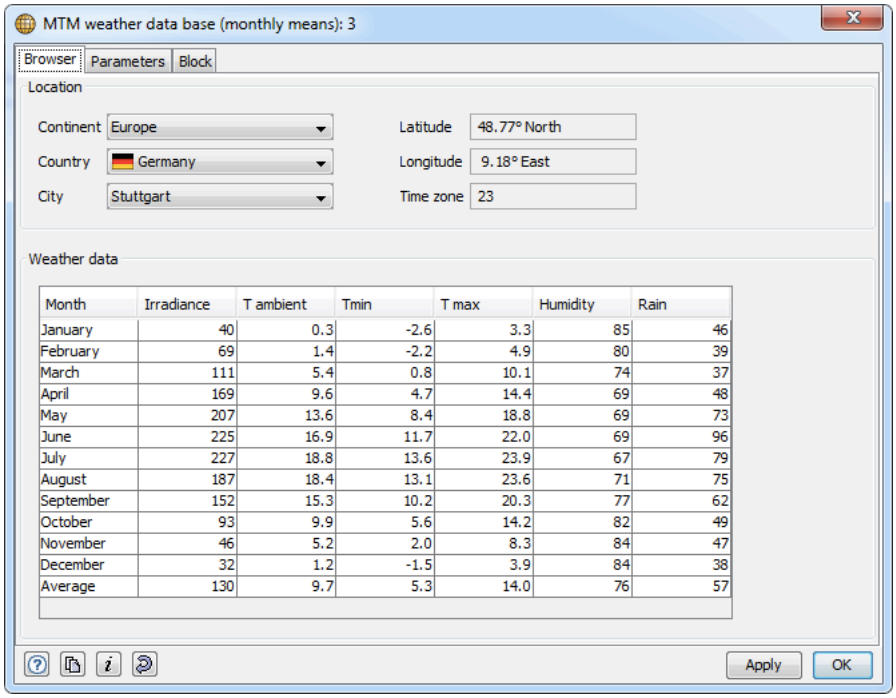


A DO block counts through the twelve months of an arbitrary year. The month is connected to a MTM block which delivers irradiance data for the location of Stuttgart, Germany.

A PLOT block displays the data.



The MTM block's VSEit entity editor provides a browser to access the data base.



Month	Irradiance	T ambient	Tmin	T max	Humidity	Rain
January	40	0.3	-2.6	3.3	85	46
February	69	1.4	-2.2	4.9	80	39
March	111	5.4	0.8	10.1	74	37
April	169	9.6	4.7	14.4	69	48
May	207	13.6	8.4	18.8	69	73
June	225	16.9	11.7	22.0	69	96
July	227	18.8	13.6	23.9	67	79
August	187	18.4	13.1	23.6	71	75
September	152	15.3	10.2	20.3	77	62
October	93	9.9	5.6	14.2	82	49
November	46	5.2	2.0	8.3	84	47
December	32	1.2	-1.5	3.9	84	38
Average	130	9.7	5.3	14.0	76	57