**WUFI® Tutorial**

# Meteonorm 6.1:
# Generate climate data for WUFI®

# Meteonorm: Climate data for WUFI®

The software Meteonorm from the Swiss company Meteotest
([www.meteonorm.com](www.meteonorm.com)) offers the possibility to create climate data for any
location worldwide. For this purpose the program includes long term monthly
mean values for a large number of weather stations. Based on this, an
interpolation could generates site-specific hourly values. In addition, Meteotest
offers the possibility to purchase individual climate data sets, created for any
specific location.

Concerning the driving rain, it´s important to note that the correlation between
wind and precipitation events is not sufficient. This could lead to an incorrect
modelling of the amount and direction of the driving rain. If the accurate amount
of driving rain is essential for the evaluation of a construction the climate data
from Meteonorm may not be sufficient.

The handling of Meteonorm 7 should be the same as in Meteonorm 6. The
essential part is the selection of the right output format („WUFI / wac" ).

# Meteonorm: Climate data for WUFI®



Preferred order of data sources:

1. Stations, if present at the desired location

2. Stations (Gh interpolated by Near stations)

3. Interpolation based on the surrounding stations (so called "Cities" are predefined locations for which data can be interpolated)

# Meteonorm: Climate data for WUFI®



For each station it is possible to choose between two periods:

Old period:
30 years standard – period for meteorological purposes.

New period:
recent observations

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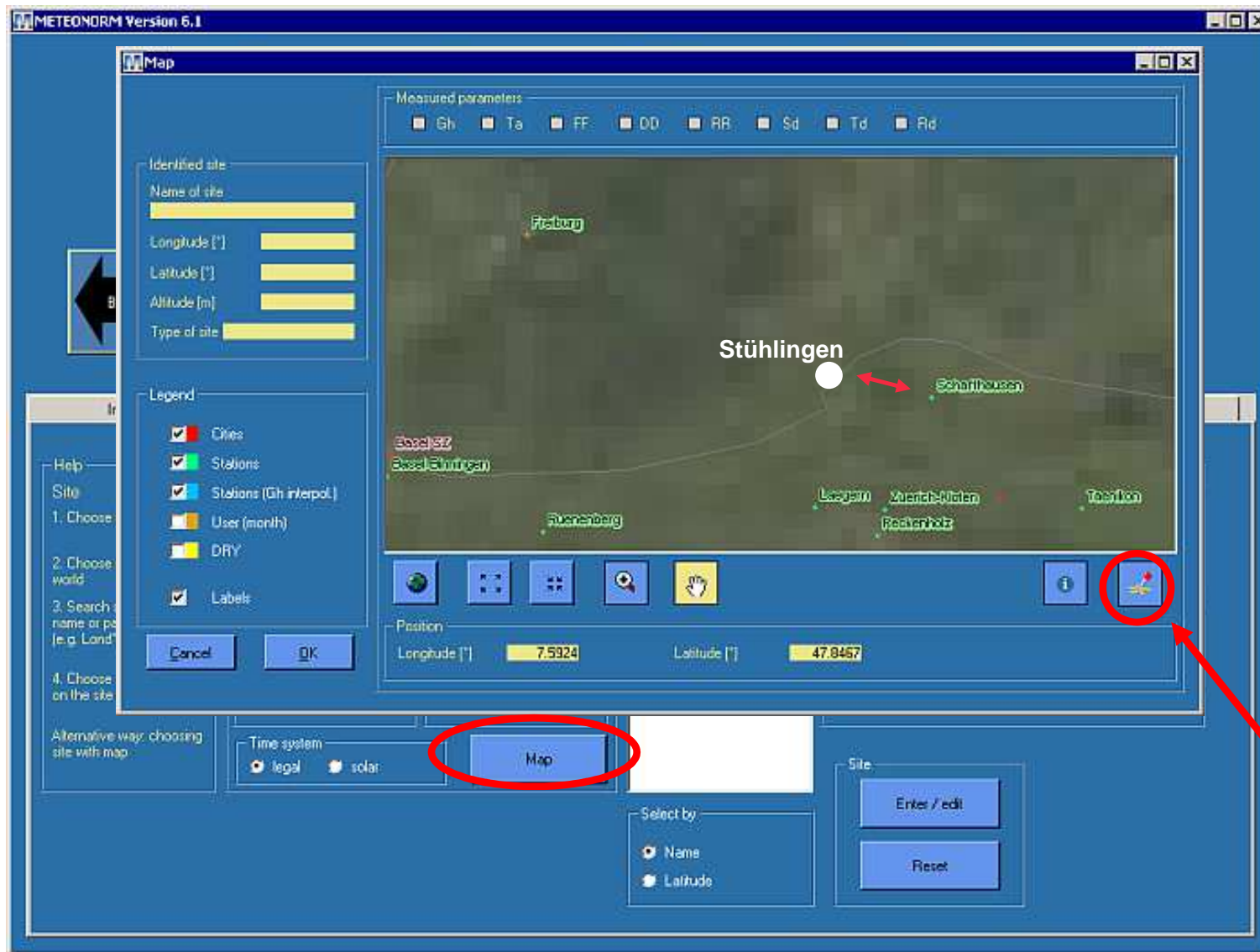


Maybe the desired location can also be represented by a nearby station:

e.g. Stühlingen through the station Schaffhausen

Otherwise:
choose a „user defined" position by a click in the map

# Meteonorm: Climate data for WUFI®



For a „user defined" location the following parameters have to be provided:

- Time Zone (Germany: 1)

- Exposition
    (open terrain, valley, peak…)

- Time Ref: -30
    (representative within the hour position
     of the sun )

# Meteonorm: Climate data for WUFI®



Output settings:

- Radiation: Default

- Tilt Modell is to be ignored, WUFI does this calculation

- Temperature: Default or 10-year-extreme

# Meteonorm: Climate data for WUFI®

Selection screen for the option „10-year extreme" climate.

# Meteonorm: Climate data for WUFI®



Output settings:

- Radiation: Default

- Tilt Modell is to be ignored, WUFI does this calculation

- Temperature: Default or 10-year-extreme

- Choose the time period

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Output format:

WUFI / WAC

# Meteonorm: Climate data for WUFI®



Calculation Window (Calculation starts automatically)

To save the generated climate dataset click the „Save" button.

To view a statistical summary of the results, click the "View results" button.

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# Meteonorm: Climate data for WUFI®

Name of site = Stuehlingen

Latitude [°] = 47.814, Longitude [°] = 8.237, Altitude [m] = 972, Climatic zone = III, 3

Radiation model = Default (hour); Temperature model = Default (hour)

Tilt radiation model = Perez

Temperature: Old period = 1961-1990

Radiation: New period = 1981-2000

Ta: Only 4 station(s) for interpolation

Rh: Only 4 station(s) for interpolation

SD: Only 4 station(s) for interpolation

Nearest 3 stations: Gh: Laegern (39 km), Ruenenberg (50 km), Schaffhausen (32 km)

Nearest 3 stations: Ta: St. Gallen (97 km), Engelberg (111 km), Ruenenberg (50 km)

| Month | H_Gh [W/m2] | H_Dh [W/m2] | N [Octas] | Ta [C] | RH [%] | FF [m/s] | DD [grad] | RR [mm] | G_Lin [W/m2] |
|-------|------|------|------|------|------|------|------|------|-------|
| Jan | 42 | 22 | 6.3 | -1.5 | 78 | 2.5 | 214 | 64 | 260 |
| Feb | 71 | 34 | 5.5 | -0.4 | 77 | 2.5 | 183 | 64 | 261 |
| Mar | 116 | 68 | 6.0 | 2.5 | 73 | 2.6 | 223 | 66 | 273 |
| Apr | 163 | 85 | 5.7 | 5.9 | 72 | 2.5 | 217 | 84 | 287 |
| May | 205 | 106 | 5.7 | 10.2 | 73 | 2.2 | 191 | 105 | 310 |
| Jun | 223 | 95 | 4.8 | 13.4 | 74 | 2.2 | 237 | 118 | 325 |
| Jul | 225 | 86 | 4.2 | 15.7 | 72 | 2.0 | 259 | 111 | 336 |
| Aug | 197 | 94 | 5.0 | 15.1 | 73 | 1.9 | 234 | 120 | 335 |
| Sep | 138 | 73 | 5.9 | 12.5 | 77 | 2.0 | 240 | 87 | 328 |
| Oct | 78 | 39 | 5.9 | 8.1 | 79 | 2.1 | 225 | 70 | 309 |
| Nov | 44 | 27 | 6.6 | 3.0 | 79 | 2.2 | 224 | 79 | 283 |
| Dec | 31 | 20 | 6.6 | -0.6 | 79 | 2.3 | 200 | 72 | 265 |
| Year | 128 | 63 | 5.7 | 7.0 | 75 | 2.3 | 219 | 1040 | 1040 |

Legend:
Ta:     Air temperature
H_Gh:   Mean irradiance of global radiation horizontal
H_Dh:   Mean irradiance of diffuse radiation horizontal
N:      Cloud cover fraction
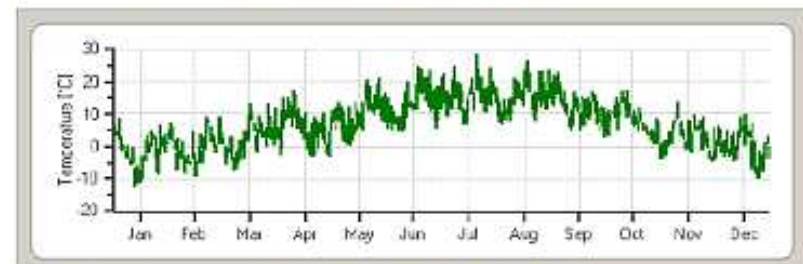RH:     Relative humidity
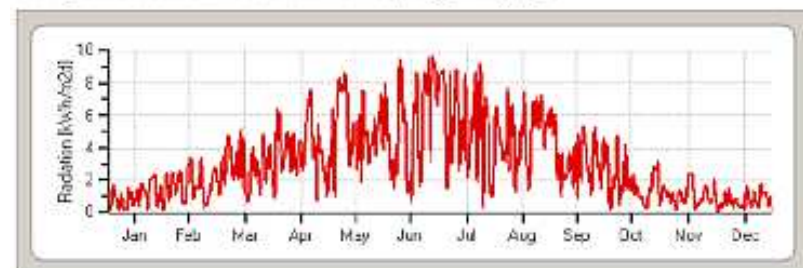FF:     Wind speed
DD:     Wind direction
RR:     Precipitation



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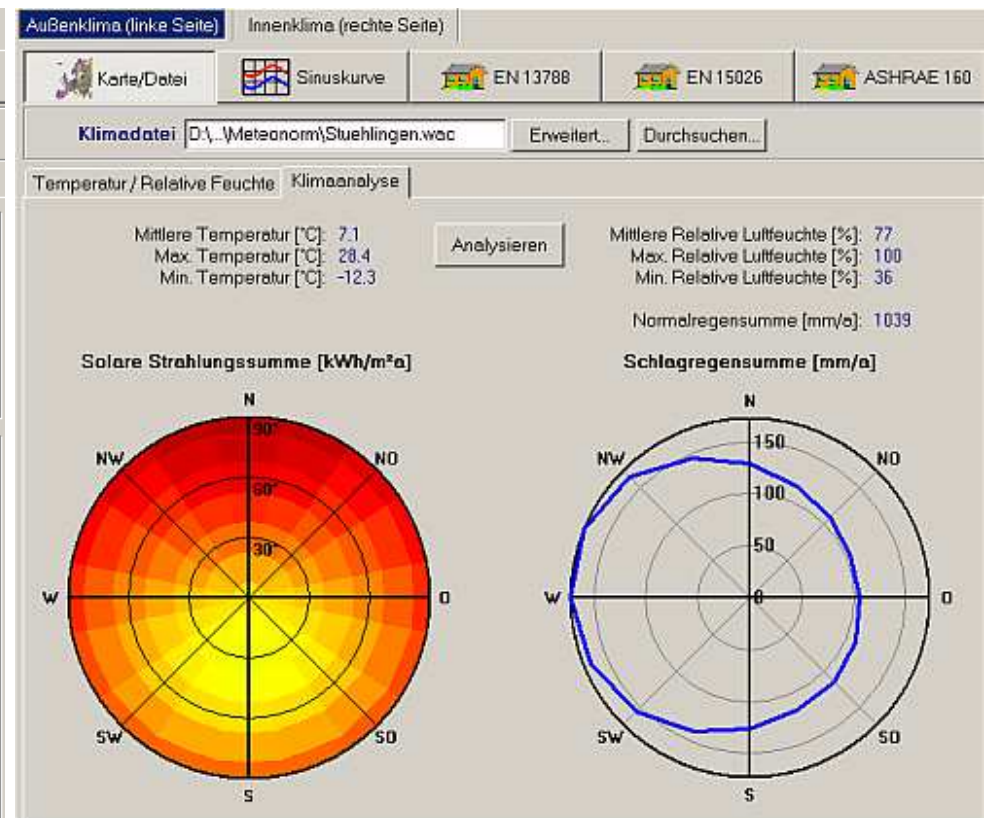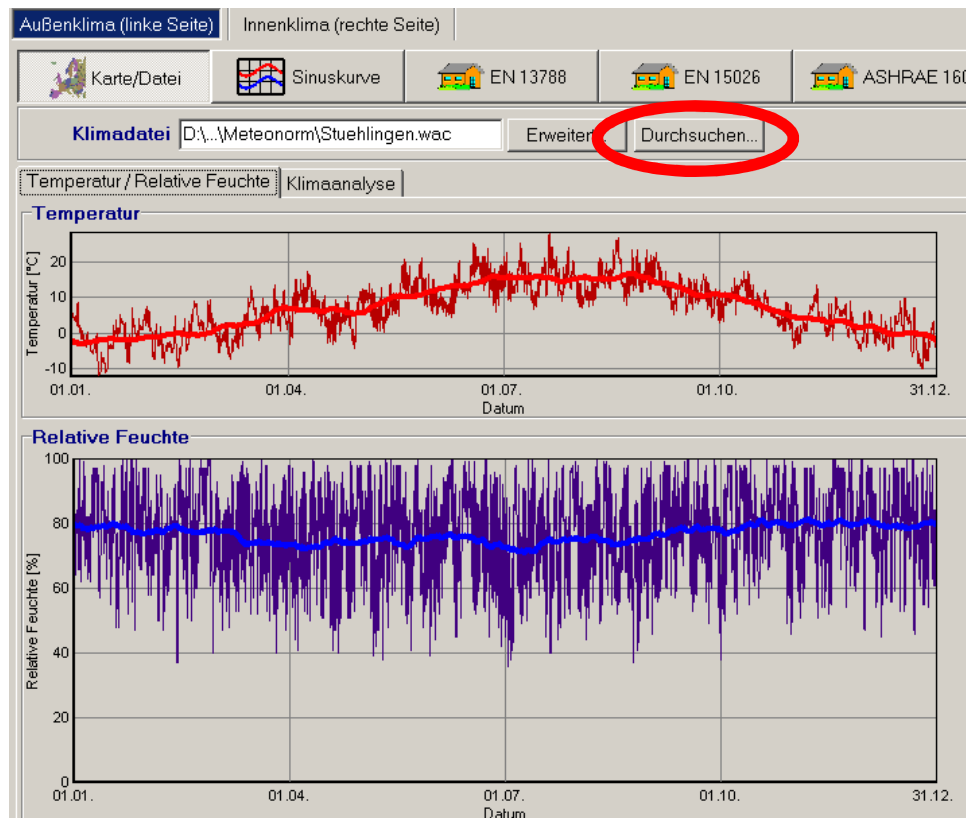C:\Programme\Gemeinsame Dateien\mn61\output\fig_tamima1.png



C:\Programme\Gemeinsame Dateien\mn61\output\fig_tadaily1.png
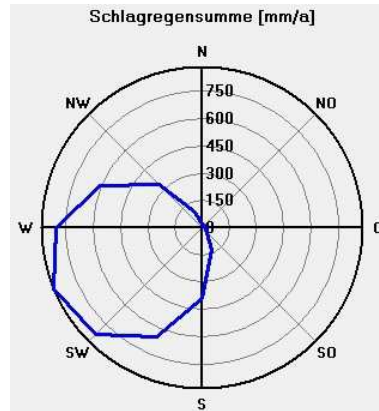


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# Meteonorm: Climate data for WUFI®
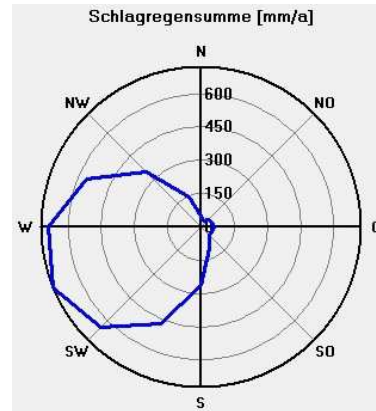
The generated climate data can be directly imported into WUFI.

# Meteonorm: Distribution of driving rain
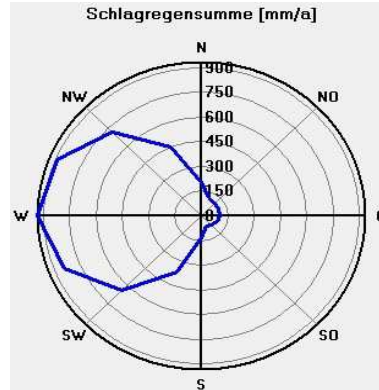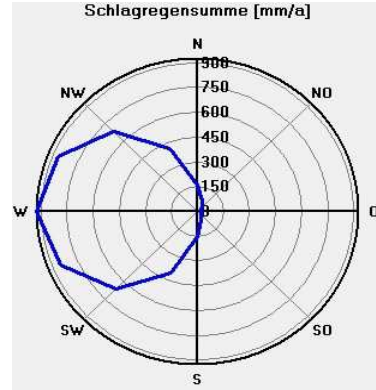
Driving rain measurement for Holzkirchen
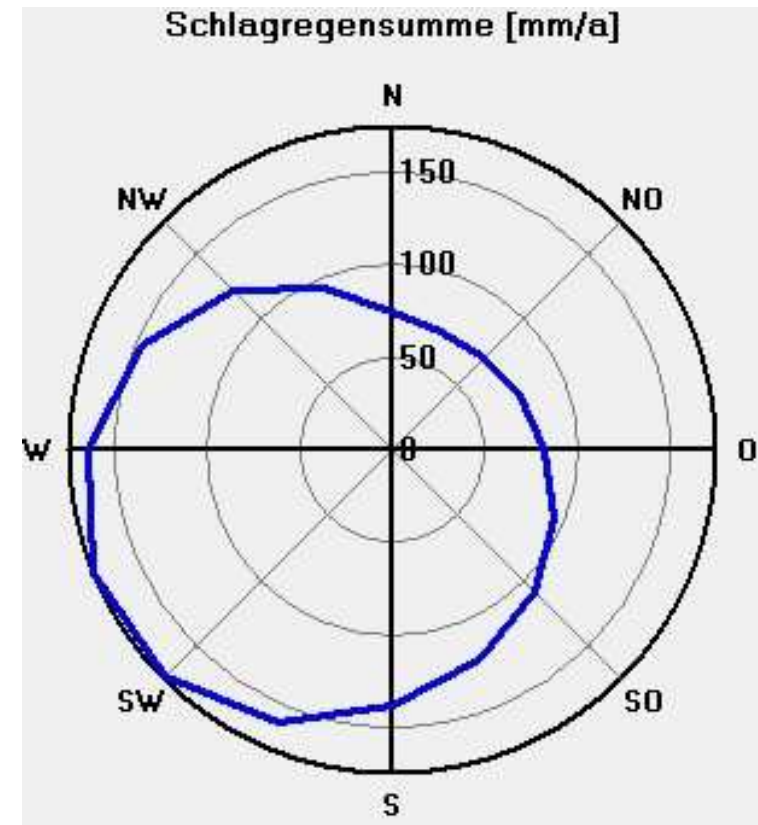
Driving rain from Meteonorm 6 for Holzkirchen



Note: The distribution of the driving rain from Meteonorm is more uniform than the measured data. Furthermore the yearly sum is less than the measurement.

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