

List of climate variables

1) Annual variables:

Directly calculated annual variables:

MAT	mean annual temperature (°C),
MWMT	mean warmest month temperature (°C),
MCMT	mean coldest month temperature (°C),
TD	temperature difference between MWMT and MCMT, or continentality (°C),
MAP	mean annual precipitation (mm),
MSP	mean annual summer (May to Sept.) precipitation (mm),
AHM	annual heat-moisture index $(MAT+10)/(MAP/1000)$
SHM	summer heat-moisture index $((MWMT)/(MSP/1000))$

Derived annual variables:

DD<0	degree-days below 0°C, chilling degree-days
DD>5	degree-days above 5°C, growing degree-days
DD<18	degree-days below 18°C, heating degree-days
DD>18	degree-days above 18°C, cooling degree-days
NFFD	the number of frost-free days
FFP	frost-free period
bFFP	the Julian date on which FFP begins
eFFP	the Julian date on which FFP ends
PAS	precipitation as snow (mm) between August in previous year and July in current year
EMT	extreme minimum temperature over 30 years
EXT	extreme maximum temperature over 30 years
Eref	Hargreaves reference evaporation (mm)
CMD	Hargreaves climatic moisture deficit (mm)
MAR	mean annual solar radiation ($MJ\ m^{-2}\ d^{-1}$)
RH	Relative humidity (%)

2) Seasonal variables:

Seasons:

Winter (*_wt*): Dec. (prev. yr) - Feb.

Spring (*_sp*): Mar. – May

Summer (*_sm*): Jun. - Aug.

Autumn (*_at*): Sep. - Nov.

Directly calculated seasonal variables:

Tave_wt winter mean temperature (°C)
Tave_sp spring mean temperature (°C)
Tave_sm summer mean temperature (°C)
Tave_at autumn (Sep. - Nov.) mean temperature (°C)

Tmax_wt winter mean maximum temperature (°C)
Tmax_sp spring mean maximum temperature (°C)
Tmax_sm summer mean maximum temperature (°C)
Tmax_at autumn mean maximum temperature (°C)

Tmin_wt winter mean minimum temperature (°C)
Tmin_sp spring mean minimum temperature (°C)
Tmin_sm summer mean minimum temperature (°C)
Tmin_at autumn mean minimum temperature (°C)

PPT_wt winter precipitation (mm)
PPT_sp spring precipitation (mm)
PPT_sm summer precipitation (mm)
PPT_at autumn precipitation (mm)

RAD_wt winter solar radiation (MJ m⁻² d⁻¹)
RAD_sp spring solar radiation (MJ m⁻² d⁻¹)
RAD_sm summer solar radiation (MJ m⁻² d⁻¹)
RAD_at autumn solar radiation (MJ m⁻² d⁻¹)

Derived seasonal variables:

DD_0_wt winter degree-days below 0°C
DD_0_sp spring degree-days below 0°C
DD_0_sm summer degree-days below 0°C
DD_0_at autumn degree-days below 0°C

DD5_wt winter degree-days below 5°C
DD5_sp spring degree-days above 5°C
DD5_sm summer degree-days above 5°C
DD5_at autumn degree-days above 5°C

DD_18_wt winter degree-days below 18°C

DD_18_sp	spring degree-days below 18°C
DD_18_sm	summer degree-days below 18°C
DD_18_at	autumn degree-days below 18°C
DD18_wt	winter degree-days below 18°C
DD18_sp	spring degree-days above 18°C
DD18_sm	summer degree-days above 18°C
DD18_at	autumn degree-days above 18°C
NFFD_wt	winter number of frost-free days
NFFD_sp	spring number of frost-free days
NFFD_sm	summer number of frost-free days
NFFD_at	autumn number of frost-free days
PAS_wt	winter precipitation as snow (mm)
PAS_sp	spring precipitation as snow (mm)
PAS_sm	summer precipitation as snow (mm)
PAS_at	autumn precipitation as snow (mm)
Eref_wt	winter Hargreaves reference evaporation (mm)
Eref_sp	spring Hargreaves reference evaporation (mm)
Eref_sm	summer Hargreaves reference evaporation (mm)
Eref_at	autumn Hargreaves reference evaporation (mm)
CMD_wt	winter Hargreaves climatic moisture deficit (mm)
CMD_sp	spring Hargreaves climatic moisture deficit (mm)
CMD_sm	summer Hargreaves climatic moisture deficit (mm)
CMD_at	autumn Hargreaves climatic moisture deficit (mm)
RH_wt	winter relative humidity (%)
RH_sp	winter relative humidity (%)
RH_sm	winter relative humidity (%)
RH_at	winter relative humidity (%)

3) Monthly variables

Primary monthly variables:

Tave01 – Tave12 January - December mean temperatures (°C)

TMX01 – TMX12	January - December maximum mean temperatures (°C)
TMN01 – TMN12	January - December minimum mean temperatures (°C)
PPT01 – PPT12	January - December precipitation (mm)
RAD01 – RAD12	January - December solar radiation ($\text{MJ m}^{-2} \text{d}^{-1}$)

Derived monthly variables:

DD_0_01 – DD_0_12	January - December degree-days below 0°C
DD5_01 – DD5_12	January - December degree-days above 5°C
DD_18_01 – DD_18_12	January - December degree-days below 18°C
DD18_01 – DD18_12	January - December degree-days above 18°C
NFFD01 – NFFD12	January - December number of frost-free days
PAS01 – PAS12	January – December precipitation as snow (mm)
Eref01 – Eref12	January – December Hargreaves reference evaporation (mm)
CMD01 – CMD12	January – December Hargreaves climatic moisture deficit (mm)
RH01 – RH12	January – December relative humidity (%)