

[AMEI] APSIM-Campbell SoilTemperature module

The scenario :

- Year : 1991
- Site : United States, Florida, Gainesville
- Soil : Silty Clay, 10 layers of different thickness
- LAI : 2
- AWC : 0.5

Inputs :

APSIM variable	Input file variable	Input file unit	Input file name
LATITUDE	XLAT	DEGREES (°)	Site.txt
MAXT	TMAX	°C	DailyValues.WTH
MINT	TMIN	°C	DailyValues.WTH
AIRTEMP	T2M	°C	DailyValues.WTH
SALB	SALB	-	Soil.txt
TAV	TAV	°C	Site.txt
AMP	TAMP	°C	Site.txt
BD	SLBDM	g/cm3	SoilLayers.txt
THICKNESS	THICK	cm	SoilLayers.txt
LL15	SLLL	cm3/cm3	SoilLayers.txt
SW	SW	cm3/cm3	SoilLayers.txt
volSpecHeatSoil	SVSE	MJ/m3/°C	SoilLayers.txt
netRadiation	RADN	MJ/m ²	DailyValues.WTH
Depth	SLLB	cm	SoilLayers.txt
Clay	SLCLY	%	SoilLayers.txt
potSoilEvap	ESP	mm	DailyValues.WTH
potEvapoTrans	EOAD	mm	DailyValues.WTH
actualSoilEvap	ESAD	mm	DailyValues.WTH
latentHeatFlux	LE	W/m ²	DailyValues.WTH

The canopy height should be put at 0, because this is a bare soil simulation.

Outputs :

The output file should be a .txt file, with different columns separated with tabulation :

- **Date**
- **SLLT** (top layer depth in cm)
- **SLLB** (base layer depth in cm)
- **TSLD** (average soil temperature in °C)
- **TSLX** (maximum soil temperature in °C) → put « na » if the value is not available.
- **TSLN** (minimum soil temperature in °C) → put « na » if the value is not available.

We also add the surface layer (characterized as a 0-0 depth layer).

The output file should look like this :

Date	SLLT	SLLB	TSLD	TSLX	TSLN
1991-01-01	0	0	23.53	na	na
1991-01-01	0	5	20.837	na	na
1991-01-01	5	15	20.863	na	na
1991-01-01	15	30	20.793	na	na
1991-01-01	30	45	20.704	na	na
1991-01-01	45	60	20.635	na	na
1991-01-01	60	90	20.581	na	na
1991-01-01	90	120	20.509	na	na
1991-01-01	120	150	20.469	na	na
1991-01-01	150	180	20.448	na	na
1991-01-01	180	210	15.8	na	na
1991-01-02	0	0	23.53	na	na
1991-01-02	0	5	20.881	na	na
1991-01-02	5	15	20.863	na	na
1991-01-02	15	30	20.793	na	na
1991-01-02	30	45	20.704	na	na
1991-01-02	45	60	20.635	na	na
1991-01-02	60	90	20.581	na	na
1991-01-02	90	120	20.509	na	na
1991-01-02	120	150	20.469	na	na
1991-01-02	150	180	20.448	na	na
1991-01-02	180	210	15.8	na	na