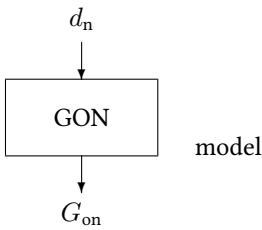


Block GON

The GON block calculates the normal extraterrestrial radiation.



Name	GON
Function	em0002
Inputs	1
Outputs	1
Parameters	1
Strings	0
Group	S

Inputs

1 Day of the year d_n

Outputs

1 Direct normal radiation outside atmosphere G_{on} / W m^{-2}

Parameters

1 Approximation
0 Spencer
1 Duffie Beckman

Strings

None

Description The radiation outside the atmosphere normal to the Sun G_{on} is given by

$$G_{\text{on}} = \epsilon_0 G_{\text{sc}}$$

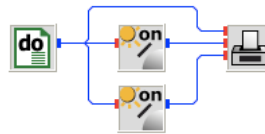
where

ϵ_0 Excentricity factor $(r_0/r)^2$, with mean distance between Sun and Earth r_0 (1.496×10^{11} m) and time dependent distance between Sun and Earth r

G_{sc} Solar constant (1367 W/m^2)

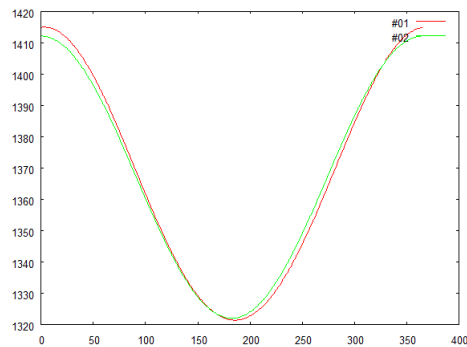
For the calculation of the excentricity factor ϵ_0 please refer to block [GOH](#).

gon.vseit



A [DO](#) block counts through the days of a year from one to 365. The two [GON](#) calculate the extraterrestrial radiation normal to the Sun for the location of Stuttgart, Germany. The upper block uses the Spencer approximation, the lower one the excentricity as given by Duffie and Beckman.

The [PLOT](#) block plots the time series.



See also Block [GOH](#), block [SUNAE](#).