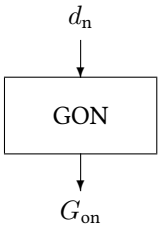
Block GON

The GON block calculates the normal extraterrestrial radiation.





model

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

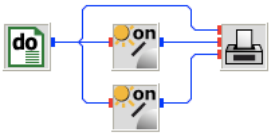
$$G_{on} = \epsilon_0 G_{sc}$$

where

ϵ_0	Excentricity factor $(r_0/r)^2$, with mean distance between Sun and Earth r_0 $(1.496 \times 10^{11}\ \mathrm{m})$ and time dependent distance between Sun and Earth r
G_{sc}	Solar constant $(1367\ \mathrm{W/m^2})$

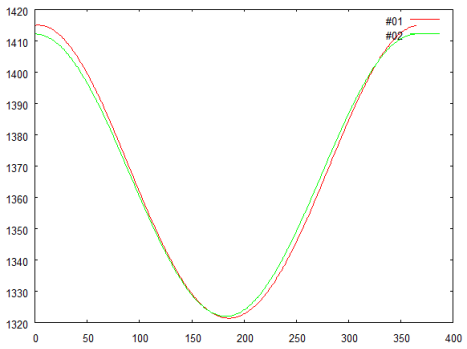
For the calculation of the excentricity factor ϵ_0 please refer to block GOH.

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 excentricty as given by Duffie and Beckman.

The PLOT block plots the time series.



See also

Block GOH, block SUNAE.