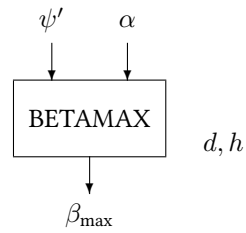


Block BETAMAX

The BETAMAX block calculates the maximum possible tilt angle such that rows of collector surfaces do not shade each other.



Name	BETAMAX
Function	em0031
Inputs	2
Outputs	1
Parameters	2
Strings	0
Group	S

Inputs

- 1 Difference between surface azimuth and azimuth of the Sun $\psi' / ^\circ$
- 2 Solar elevation $\alpha / ^\circ$

Outputs

- 1 Maximum tilt angle $\beta_{\max} / ^\circ$

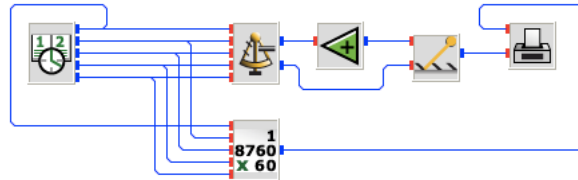
Parameters

- 1 Distance between module rows d / m
- 2 Height of modules h / m

Strings

None

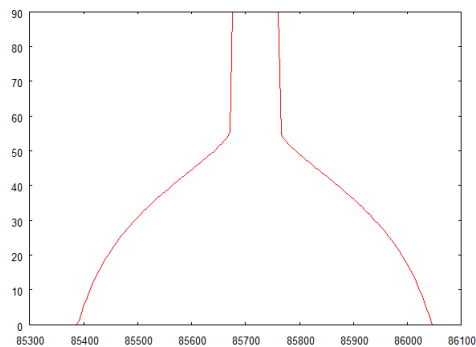
betamax.vseit



A **CLOCK** block drives this simulation between 06:00 o'clock in the morning until 07:00 p.m. in steps of five minutes on the first of March 2010. The **SUNAE** block is used to calculate the solar azimuth and elevation. An **OFFSET** block with parameter -180 is used to calculate the difference between surface azimuth and solar azimuth, as required by the **BETAMAX** block.

The parameters of the **BETAMAX** block are set to 3.65 meters for the distance between the module rows and 2 meters for the height of the modules.

The Gregorian date of the **CLOCK** block is converted into the minute of the year by a **MOY** block, which is used as x -coordinate by the **PLOT** block.



It can be seen from the graph, that around noon no shading is to be expected, regardless of the tilt angle, while the receiver rows have shading problems depending on the actual tilt angle.