How is the constant "284" derived within the Solar Declination Angle equation?

Asked 6 years, 7 months ago   Modified 6 years, 7 months ago   Viewed 3k times

How is the constant "284" derived within the Solar Declination Angle equation?

2

The earth's axis results in a day-by-day variation of the angle between the earth-sun line and the earth's equatorial plane called the solar declination δ. This angle may be estimated by the following equation [6]:

$$\delta = 23.45^\circ \sin\left[\frac{360^\circ}{365}(284 + N)\right], \qquad (2.1)$$

where N = year day, with January 1 +1.

from [ScienceDirect Topics: Solar Declination](#)

earth   geometry   sun

Share Cite Improve this question Follow

1 Answer

Sorted by: Highest score (default)

This is to get the correct phase, so that for $N = 81$ (which is March 21, the March equinox) the result will be $\delta = 0$, as shown in the graph below.

Image from

Share Cite Improve this answer Follow

edited Jul 3, 2019 at 9:29

answered Jul 2, 2019 at 11:39

Thomas Fritsch
43k   13   78   150

Start asking to get answers

Find the answer to your question by asking.

Ask question

Explore related questions

earth   geometry   sun

See similar questions with these tags.