

DETECTING THE ILLUMINATION OF SOLAR CELLS IN SPACE FOR SUNSYNCHRONOUS ORBIT

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In order to get the parameters of the solar cell to accurately draw its I-V curve since this characteristic is the most important diagnostic measurement used to determine the physical parameters for the design and evaluation of solar cells, these parameters involved have a physical meaning and are hence related to the physical phenomena occurring in the device, this curve is very important especially in space because as space missions evolve to demand economical systems, the need also increases for faster tools to design, analyze, and simulate such systems but before deducing this curve there are some circumstances concerning the solar cell should be specified. These data are average illumination and temperature of the solar cell, which has a great effect on the system sizing for space application. In the following paper detecting the solar cell average illumination subjected to in space will be discussed. The modeling and simulation of such issue is carried out through the application of MATLAB.

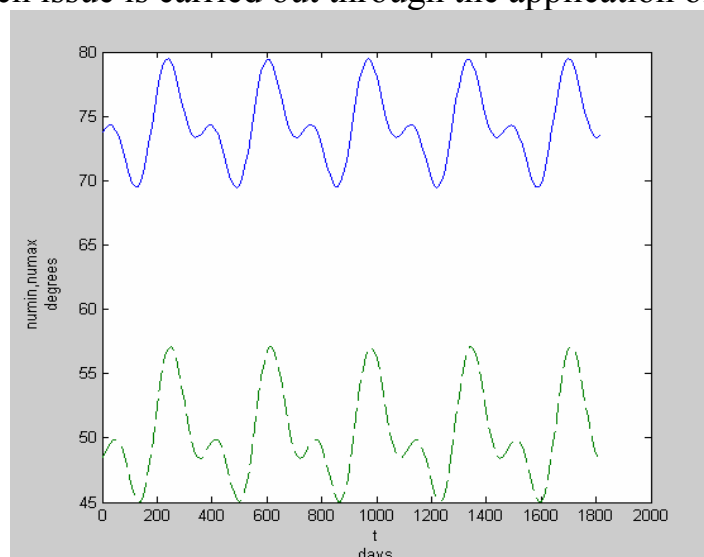


FIGURE 1: num,ax, numin versus tim

In Fig.1 it is noticed that the curve of v_{\max} and v_{\min} with time is periodic since the orbit is sun synchronous alternately minimum of the minimum and maximum of the maximum are used in calculations.

TOPICS + KEYWORDS: Solar Cells for Space applications: orbital motion, space geometry , simulation.