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RESEARCH ON THE SOLAR ARRAYS SHADOWED BY SATELLITE BODY

Abstract

Due to geometry changes between solar and satellite, power from solar arrays will decrease because some arrays are shadowed by satellite body. In order to accurately determine the output power changes of the solar arrays, and take more abundant supply into account in design procedure, we need to analyze the solar arrays shadowed situation in orbit. This paper firstly introduces Leo Sun Synchronous Orbit (SSO) satellite as an example. The shapes of solar arrays shadowed by body during the periods are studied and the shaded areas are also carried out. Then, the situations of Geostationary Orbit (GEO) satellite's solar arrays shadowed by lens hood of camera are discussed. The worst condition of GEO satellite power supply in one year is pointed out after the shaded areas are estimated.