

Multi-utility Spacecraft Charging Analysis Tool (MUSCAT) Development Overview

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Since the failure of ADEOS-II, charging of polar orbiting satellites has become a serious issue. Japanese Aerospace Exploration Agency has decided to develop a computational tool that can calculate charging status of a polar orbiting satellite jointly with Kyushu Institute of Technology. The simulation code is a combination of Particle-in-Cell method and Particle Tracking method and can be used not only for a polar satellite but also for a GEO satellite or a low inclination LEO satellite. The aim of the simulation code is to give satellite designers chances to identify the charging hazard in the satellite design phase with user-friendly interface. The development of software named, Multi-utility Spacecraft Charging Analysis Tool (MUSCAT), started in November, 2004. Overview of development plan and current status of the simulation code will be presented.

衛星開発プロセスにおけるMUSCATの役割

