

PROTECTION OF COMMUNICATION SYSTEM FROM SOLAR FLARES MEASURES TO ENCOUNTER DEEP CHARGING

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ABSTRACT

The world has landed in space age and with this tackling of problems related to protection of our communication systems has gained prime importance. The solar flares hurtling past the earth at the speed of 1 million per hour offer a potentially brilliant light leading to the arcing of communication system satellites. Thus the issue of space charging, solar charging and solar arcing remains a problem. The solar flares send out clouds of charged particles which bombard with the electronic circuitry of the satellite causing uneven ionization of their surfaces hence damaging them by affecting their functionality. As a consequence of this phenomenon called “*deep charging*”, a huge amount of technological and financial resources is wasted away.

The paper discusses the environmental factors significant to space craft charging such as plasma interactions, electric and magnetic fields etc. and also contributes to an almost effective and efficient solution to this problem. It is proposed that if the surface of satellites is covered with solar panels incorporating the use of lithium batteries, the energy of the solar flares can be trapped, preventing the heating of satellite surface to avoid “*deep charging*”. For the protection of these panels, an outer coating of glass like material is suggested.

In the arena of 21st century, managing financial resources and providing sound technology is a big challenging task. Thereby , finding a way out to protection of satellites which this paper has projected may prove as a boon to provide uninterrupted technological services.