



Solar Energetic Particle Environment Modelling: the ESA SEPEM Project

Norma Crosby and the SEPEM Team

Belgian Institute for Space Aeronomy, Brussels, Belgium (norma.crosby@oma.be, +32 2 374 84 23)

Incorporating recent scientific results and a complete set of cross-calibrated data, the ESA Solar Energetic Particle Environment Modelling (SEPEM) project has created new engineering models and tools to address current and future needs. Both statistical and physical modelling techniques have been addressed, covering solar energetic particle environments ranging from 0.2AU to 1.6AU. Essential supporting elements also developed within the framework of SEPEM have been the creation of a standard solar energetic particle dataset and a user-friendly web-server with access to the models developed under this project and a number of industry standards. SEPEM moves beyond mission integrated fluence statistics to peak flux statistics and durations of high flux periods. Furthermore SEPEM has integrated effects tools to allow calculation of single event upset rate and radiation background for a variety of engineering scenarios. In this paper we highlight the functionalities available on the SEPEM webserver while presenting the models that have been developed during the SEPEM project.