Geophysical Research Abstracts
Vol. 12, EGU2010-15044-1, 2010
EGU General Assembly 2010

SEPEM: a Tool for Solar Energetic Particle Environment Modelling

Norma Crosby (1), Alexi Glover (2), Angels Aran (2), Cédric Bonnevie (3), Clive Dyer (4), Steve Gabriel (5), Alex Hands (4), Daniel Heynderickx (6), Carla Jacobs (7), Piers Jiggens (5), David King (4), Gareth Lawrence (3), Stefaan Poedts (7), Blai Sanahuja (8), and Pete Truscott (4)

(1) Belgian Institute for Space Aeronomy (BISA), BELGIUM (norma.crosby@oma.be), (2) ESA/ESTEC, Netherlands, (3) BISA/RHEA, Belgium, (4) QinetiQ, United Kingdom, (5) University of Southampton, United Kingdom, (6) DH Consultancy, Belgium, (7) K.U. Leuven, Belgium, (8) University of Barcelona, Spain

Incorporating recent scientific results and a complete set of cross-calibrated data, the ESA Solar Energetic Particle Environment Modelling (SEPEM) project is working towards creating new engineering models and tools to address current and future needs. To simulate past events and future scenarios SEPEM moves beyond mission integrated fluence statistics to peak flux statistics and durations of high flux periods. It also integrates effects tools to allow calculation of single event upset rate and radiation background for a variety of scenarios. Furthermore SEPEM is also improving existing physics-based shock-particle propagation models to predict the expected event-time profiles at non-Earth locations [SOLPENCO2]. One of the important outputs of SEPEM is the creation of a standard solar energetic particle dataset. This dataset has been generated to include all known data caveats and represents the most accurate dataset that could be generated based on the information retrieved from instrument teams and a complete literature search. A further output of SEPEM that will be open to the user community is a user-friendly webserver with access to the models being developed under this project. SEPEM is currently under development and this presentation highlights the work done so far and upcoming developments. The full release of SEPEM will take place during the second half of 2010.