TIME-DEPENDENT 3-D MODELLING OF THE HELIOSPHERIC PROPAGATION OF FEW-MEV ELECTRONS

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With a recently developed steady-state model of the propagation of Jovian and galactic electrons in the inner three-dimensional heliosphere we were able to demonstrate both the necessity and value of such modelling for (i) the determination of the diffusion tensor of energetic particles, (ii) an observational discrimination between Jovian and interstellar electrons as well as (iii) a bracketing of the range of the possible interstellar electron fluxes at low energies (see Ferreira et al., this volume). These studies revelead the need of a time-dependent modelling in order to fully explain measurements made with the Ulysses spacecraft. Therefore, by reducing the complexity of this approach with an averaging w.r.t. particle energy and by the use of mono-energetic transport parameters, we have derived an alternative formulation that allows us an explicit consideration of the time dependence of the electron fluxes. After a demonstration of the model's capability to reproduce (despite the energy-averaging) in a very good approximation the results of the energy-resolving steady-state model, we will present first results and exploit the new feature of an explicit time-dependence by comparisons with observations made with the Ulysses and the SOHO spacecraft.