CONSEQUENCES OF DIFFERENT INTERSTELLAR ELECTRON SPECTRA ON 16 MEV EL

S.E.S FERREIRA(1),M.S. POTGIETER(1),U.W. LANGNER(1)AND O.C.DE JAGER(1)
(1) POTCHEFSTROOM UNIVERSITY

The 'local' interstellar spectrum (IS) for cosmic ray electrons at energies of interest to heliospheric modulation studies is still basically unknown. New computations of the IS based on advanced modeling of cosmic-ray propagation in the Galaxy, and observations including diffuse galactic gamma rays, indicated that the electron IS may be considerably lower at energies below ~100 MeV than previously assumed. For this work different scenarios for the electron 'local' IS, and their subsequent modulation in the heliosphere, are studied using a numerical three-dimensional modulation model including the Jovian source. Comparing the parallel mean free paths needed to produce compatibility between the ~16 MeV Pioneer 10 observations, to observed and computed values at Earth, an upper and lower limit to the electron IS at the modulation boundary are proposed.