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Jovian jets as a probe for the mean free path in the inner heliosphere

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Since the pioneer mission, the jovian magnetopshere is known as a dominant source of MeV-electrons in the inner heliosphere. The large scale propagation of these jovian electrons can be described by Parker's transport equation. However, during the first and second Jupiter approach of the Ulysses spacecraft 1992 and 2003, respectively, highly anisotropic jets of MeV-electrons were observed in the vicinity of the planet. It was shown that these electrons are of Jovian origin that propagate along flux tubes connected to Jupiter's magnetosphere. It was found that these electron jets carry an energy spectra that is modulated by Jupiter's rotation period ($\sim$10h) into the heliosphere. However, these modulation vanishes at distances of about 0.5 AU. In this contribution we presentate a numerical solution of the Fokker-Planck equation for a periodic source term in order to simulate the modulation of the energy spectra. As a first approach, we consider only pitch-angle diffusion and neglect perpendicular diffusion and adiabatic energy losses. Since the pitch-angle diffusion coefficient Dμ μ is related to the particle's mean free path, it is possible to derive a mean free path for MeV-electrons in the inner heliosphere when comparing the model calculations with the observations.