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The active Sun and its implication for the heliosphere
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Cross-field transport of SEPs in Large Scale Fluctuations

Kelly, James¹, Dalla, Silvia¹ and Laitinen, Timo¹

¹Jeremiah Horrocks Institute, University of Central Lancashire

The results of numerical simulations of Solar Energetic Particles (SEPs) travelling in an Interplanetary Magnetic Field (IMF) which exhibits large-scale fluctuations are presented. The IMF is modelled as a Parker spiral with superimposed large-scale turbulence due to magnetic footpoint motion at the solar surface, as proposed by Giacalone (2001). SEP propagation is analysed by means of a full-orbit test particle code. We compare scatter-free propagation with the case when SEPs suffer ad-hoc isotropic pitch-angle scattering and investigate differences in spatial distributions and arrival times at 1AU for populations of various energies. We find that introducing scattering results in a fraction of the particles experiencing cross-field transport. We analyse how this phenomenon depends on the turbulence properties and discuss its physical causes.