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Role of 3D propagation in shaping Solar Energetic Particle observables

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The propagation of Solar Energetic Particles (SEPs) has been described traditionally by means of a spatially 1D focussed transport approach. However in recent years a number of physical mechanisms that give rise to motion across the mean magnetic field have been studied. These include perpendicular transport associated with turbulence, guiding centre drifts and drift along the heliospheric current sheet. In this presentation such mechanisms will be reviewed and emphasis will be placed on how assumptions and scenarios based on a 1D approach need to be modified when looking at SEP propagation from a 3D perspective. Observables such as time intensity profiles and anisotropies obtained from 3D models will be discussed and compared with observations.