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Effects of the Magnetic Clouds over the Solar Energetic Particle Events

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We have simulated the effect of the magnetic topology of the Magnetic Clouds (MCs) over the solar energetic particle event (SEPe) fluxes (0.5-100 MeV) provided by solar flares. When a SEPe passes through a MC a characteristic behaviour in the data corresponding to the ion and electron fluxes is observed: a depression after a strong maximum of the flux. Using our cross-section circular and elliptical MC models we have tried to explain that effect, understanding the importance of the topology of the MC. In sight of the results of the preliminary analysis we conclude that the magnitude of the magnetic field seems not to play a significant role but the helicoidal topology associated with topology of the MCs.

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