

## **PARTICLE ENERGIZATION IN DIAMAGNETIC REGIONS**

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Acceleration of charged particles is of fundamental importance in many space and astrophysical plasma systems. Particularly controversial is the observation of energetic particles associated with cusp diamagnetic cavities. While there are indications that the acceleration of these particles occurs locally other observations seem to indicate the quasi-parallel bow shock as the source region for these particles. We address this issue in the framework of testparticle simulations using electric and magnetic field from MHD simulations of diamagnetic cavities. Our previous results have already indicated a high efficiency of particle acceleration. This presentation will specifically address properties of the acceleration process, i.e., the acceleration mechanism, the scaling of particle energies and the influence of particles will be accelerated in diamagnetic regions. In addition of non-adiabatic aspects of the particle dynamics.

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