

Abstract Submitted
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How robust is the Fermi acceleration in magnetic reconnection?

FAN GUO, HUI LI, WILLIAM DAUGHTON, Los Alamos Natl Lab, XIAOCAN LI, University of Alabama in Huntsville, YI-HSIN LIU, Los Alamos Natl Lab — Previous kinetic simulations (Guo et al. 2014) have found that magnetic reconnection in relativistic plasmas is highly efficient at accelerating particles through a first-order Fermi process resulting from the curvature drift of particles in the direction of the electric field induced by the relativistic flows. This abstract will focus on understanding how robust the mechanism is in magnetic reconnection. We will discuss this mechanism in large 2D systems with very long simulation time and 3D systems where flux tubes are not well defined. We will also discuss the influence of anisotropy and collision to the mechanism.

- [1] Guo F., Li, H., Daughton, W., Liu, Y., Formation of Hard Power-laws in the Energetic Particle Spectra
- [2] Resulting from Relativistic Magnetic Reconnection, Physical Review Letters, in review, arxiv: 1405.4040

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