Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Improved Boundary Model for Particle Simulation of Collisionless Driven Reconnection H. OHTANI, R. HORIUCHI, NIFS, Japan, Grad. Univ. Adv. Studies,Japan — To clarify the relationship between particle kinetic effects and anomalous resistivity due to plasma instabilities in collisionless driven reconnection, we develop a three-dimensional Particle Simulation code for Magnetic reconnection in an Open system (PASMO). Recently, we have improved a model of upstream boundary to satisfy sufficiently the frozen-in condition both for ions and electrons. From the condition, plasma inflow is driven by $E \times B$ drift due to a driving electric field. In the previous model, particles are supplied into the system each time step, based on the particle flux through upstream boundary. The number density changes in proportion to magnetic field. In the improved model, particles in a cell near upstream boundary are newly loaded so as to satisfy shifted Maxwellian rigorously every time step. Using this model, the frozen-in condition is satisfied near the boundary both for electrons and ions. We will discuss the relationship between excitation of instability and mechanism of magnetic reconnection in the meeting.

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Date submitted: 22 Jul 2006 Electronic form version 1.4