

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Role of Electrostatic Fields in Reconnection and Dynamo Processes in Laboratory and Astrophysical Plasmas GIOVANNI LAPENTA, STEFANO MARKIDIS, TOM INTRATOR, LANL — Several of the key electric fields measured in laboratory, observed in space and computed in simulations of processes of energy exchange are electrostatic. In a project at LANL based on the RSX experiment back some years ago, we started investigating this point based on previous simulation and experimental work. Since then we have conducted a number of investigations with the new massively parallel iPic3D code and with MHD codes for conditions typical of the RSX device. We present here our recent conclusions: the electric field plays, as well know, a key role. But the new important conclusion is that this field is by the large part electrostatic. We will present our evidence for discussion.

Giovanni Lapenta

Date submitted: 30 Jun 2011

Electronic form version 1.4