

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Cross-field current rotating around a linear magnetized laboratory plasma column as a new mechanism of the low-frequency instability
STEVE JAEGER, THIERY PIERRE, CNRS, Aix-Marseille University, France —
A new mechanism leading to low-frequency instability of a linear magnetized plasma column is identified. In the MiSTRAL device (Institute for Fusion Physics, CNRS and Aix-Marseille Univ.), the injection of negative charges along the plasma column with no complete axial collection by the end plate leads to the intermittent relaxation of the plasma potential evolving most often in a rotating plasma channel across the B-field. The negative charges are evacuated along the transverse rotating plasma leading to the recorded cross-field current. The polarization of the collecting tube around the plasma column is the control parameter of this instability which had formerly incorrectly been analyzed as diamagnetic drift waves or cyclotron waves.

Thierry Pierre
CNRS and Aix-Marseille University, France

Date submitted: 19 Jul 2008

Electronic form version 1.4