

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Rotation dynamics with & without Internal Transport Barriers GUILHEM DIF-PRADALIER, PATRICK H. DIAMOND, Center for Astrophysics and Space Sciences, UCSD, La Jolla, CA 92093, USA, C.S. CHANG, S. KU, Courant Institute of Mathematical Sciences, New York University, NY 10012, USA, Y. SARAZIN, V. GRANDGIRARD, J. ABITEBOUL, X. GARBET, PH. GHENDRIH, A. STRUGAREK, Association Euratom-CEA, CEA/IRFM, F-13108 St. Paul-lez-Durance cedex, France — We investigate the dynamics of both poloidal and toroidal flows in the presence (or absence) of a reversed safety factor profile through a scan in the incoming heat power applied to the plasma. Doing so, it incidentally also addresses the question of a power threshold for a self-consistent ITB formation in gyrokinetic modeling. As a prime candidate to drive the system away from its neoclassical prediction, we recently showed evidence of turbulence-generated poloidal rotation, consistently with earlier theories. Accurate calculation of the radial electric field is central. Accordingly, description of the mean profile dynamics, as done in *full-f* flux-driven models is shown to take on a very prominent role. The study is performed using both the GYSELA and XGC-1 gyrokinetic codes with Enhanced Reverse Shear (ERS)-like parameters.

Guilhem Dif-Pradalier
Center for Astrophysics and Space Sciences,
UCSD, La Jolla, CA 92093, USA

Date submitted: 24 Jul 2009

Electronic form version 1.4