

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Parameter dependences of toroidal rotation and momentum transport in JT-60U** MAIKO YOSHIDA, YUTAKA KAMADA, HIDE-NOBU TAKENAGA, YOSHITERU SAKAMOTO, NAOYUKI OYAMA, HAJIME URANO, Japan Atomic Energy Agency — Prediction and controllability of the toroidal rotation profile are open issues in ITER because parameter dependences of the ratio of the toroidal momentum diffusivity to the thermal diffusivity and the ratio of the convection velocity to the toroidal momentum diffusivity are not understood well. Parameter dependences of these ratios are essential to understand the mechanisms determining the rotation profile and the level of momentum transport. In this paper, dimensional and non-dimensional parameter dependences of the momentum transport coefficients and these ratios are investigated. It is found that the ratio of the toroidal momentum diffusivity to the thermal diffusivity increases with increasing the normalized poloidal Larmor radius. The ratio of the inward convection velocity to the toroidal momentum diffusivity decreases with increasing the normalized collisionality and decreasing the normalized poloidal Larmor radius. Relations between core and edge rotations are found and the physics mechanisms are discussed from the viewpoints of pinch effect and intrinsic rotation.

Maiko Yoshida  
Japan Atomic Energy Agency

Date submitted: 14 Jul 2009

Electronic form version 1.4