Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Analyses of core heat transport in plasmas with different toroidal rotation profiles in JT-60U[1] EMI NARITA, Graduate School of Engineering, Osaka University, MITSURU HONDA, NOBUHIKO HAYASHI, HAJIME URANO, SHUNSUKE IDE, Japan Atomic Energy Agency, TAKESHI FUKUDA, Graduate School of Engineering, Osaka University — It has been reported that in H-mode plasmas, toroidal rotation in the co direction with respect to the plasma current is more favorable for energy confinement than that in the counter direction. Effects of toroidal rotation on core temperature profiles have been pointed out, whereas the improved confinement has been found to be due to an increase in the pedestal temperature with co-toroidal rotation and profile resilience. In JT-60U, roles of toroidal rotation have been studied using neutral beam injection changes [1]. In this study, core heat transport of these plasmas with different toroidal rotation profiles is investigated with several transport models implemented in the transport code TOPICS [2]. These transport models give the anomalous heat diffusivity and are tested against conventional H-mode plasmas in JT-60U. The calculations are performed with the $E \times B$ shear effect. The relationship between heat transport and toroidal rotation is examined with a flux-tube gyrokinetic code, which we will present in the paper.

[1] H. Urano *et al.*, Nucl. Fusion **48**, 085007 (2008).
[2] N. Hayashi and JT-60 Team, Phys. Plasmas **17**, 056112 (2010).

[1]Work supported by JSPS Research Fellowships for Young Scientists

Emi Narita
Graduate School of Engineering, Osaka University

Date submitted: 12 Jul 2013 Electronic form version 1.4