

Abstract Submitted
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Effects of ion-temperature-gradient driven turbulence on magnetic islands AKIHIRO ISHIZAZWA, National Institute for Fusion Science, F. WAELBROECK, R. FITZPATRICK, W. HORTON, Institute for Fusion Studies, University of Texas, N. NAKAJIMA, National Institute for Fusion Science — Effects of ion-temperature-gradient driven turbulence on magnetic islands are investigated by means of numerical simulations of a reduced set of two-fluid equations which include not only electron diamagnetism but the ion diamagnetism in slab geometry. Simulations are carried out in the island fixed frame, where the width and poloidal location of magnetic island do not change. Uniform ExB flow is applied to the island, and the drive as well as the drag force acting on the island are calculated as a function of the externally applied flow velocity. The turbulent fluctuations enhance the momentum exchange across the separatrix of island and thus enhance the drag force acting on the island. The zonal flow produced by the turbulence makes the island propagation velocity deviate strongly from the one without the turbulence.

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