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Analysis of interaction mechanism of off-resonant mode in reversed shear plasma SHINSUKE TOKUNAGA, National Fusion Research Institute, Daejeon, Korea, MASATOSHI YAGI, SANAE-I. ITOH, Research Institute for Applied Mechanics, Kyushu University, Kasuga, Fukuoka, Japan, KIMITAKA ITOH, National Institute for Fusion Science, Toki, Gifu, Japan, PATRICK DIAMOND, Depatment of Physics, University of California at San Diego, La Jolla, CA USA — It is known that off-resonant modes around q-minimum position in reversed magnetic shear configuration in tokamak bury the resonant surface gap and essentially change the transport to be smooth over the zero-shear region. Such role of the off-resonant mode has been a problem in reproducing ITB with gyro-fluid simulation. The off-resonant ITG mode in vicinity of q-minimum position was reported to be slab-like one coupled with surrounding toroidal ITG mode. However, how they are coupled in the region where toroidal mode coupling is weak has not been stated. In this study, interaction between off-resonant modes and the other modes is investigated. Radial electric field source was introduced into a gyro-fluid code to examine the ExB flow shear effect flexibly on the interaction related to off-resonant mode. It was confirmed that the ExB flow shear with amplitude in the same order as spontaneous zonal flow provided by the electric field source is insufficient to suppress the off-resonant mode. The analysis of coupling mechanism between off-resonant slab-like ITG mode and toroidal resonant modes is in progress.

Shinsuke Tokunaga
National Fusion Research Institute, Daejeon, Korea

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