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Effect of external plasma flows on the interaction between turbulence and convective cells KEN UZAWA, YASUAKI KISHIMOTO, Graduate School of Energy Science, Kyoto University, JIQUAN LI, Southwestern Institute of Physics — It is widely recognized that large scale structures, such as zonal flows, streamers and also long wavelength Kelvin-Helmholtz modes are nonlinearly generated from maternal turbulence through modulational instability process and play a crucial role in regulating the transport in tokamaks. In order to control the transport, it is desirable to control such structures and/or modulational process. One of control parameters may be *mean flow* which intrinsically exists in tokamak plasmas. Besides the direct influence on the transport through vortex decorrelation, the mean flow may indirectly change the zonal flow generation by acting on the modulational process itself. In this work, we theoretically investigate the characteristics of zonal flow generation due to the electron temperature gradient (ETG) turbulence in the presence of long wavelength ITG driven zonal flow. This was done by extending our previous modulational analyses 1. We have numerically analyzed the influence of mean flow on zonal flow generation. The main result is that the zonal flow generation is suppressed by the presence of the mean flow. [1]J. Li, Y. Kishimoto, Physics of Plasmas, 9, 1241 (2002)

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