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Intermittent dynamics originated from geodesic acoustic modes (GAMs) near critical gradient regime KAZUHIRO MIKI, Graduate School of Energy Science, Kyoto University, NAOAKI MIYATO, Japan Atomic Energy Agency, JIQUAN LI, YASUAKI KISHIMOTO, Graduate School of Energy Science, Kyoto University — Dimits shift phenomenon, namely, the nonlinear upshift of stability threshold of ITG fluctuations, has been well recognized through understanding the suppression role of zonal flows. Here we present a novel intermittent dynamics of zonal flow and ITG turbulence system near the critical gradient regime by performing 5-filed Landau fluid global toroidal ITG turbulence simulation. It is identified that the intermittency originates from the coupling between the zonal flows and GAMs, where the latter can effectively damp the zonal flows. This process seems to be similar to the well-known collisional damping of zonal flows, which also cause an intermittency of ion heat transport. However, the observed bursting process here due to the coupling with GAMs can locally promote the energy accumulation of the stationary zonal flows so that ITG turbulence is quenched after several bursty periods. The details of the GAMs dynamics near the critical gradient regime will be reported.

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