Abstract Submitted
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Multi-field Characteristics and Eigenmode Spatial Structure of Geodesic Acoustic Modes (GAMs) in DIII-D[1] G. WANG, W.A. PEEBLES, T.L. RHODES, E.J. DOYLE, L. SCHMITZ, L. ZENG, UCLA, J.C. HILLESHEIM, CCFE, M.E. AUSTIN, U. Texas, Z. YAN, G.R. MCKEE, U. Wisc., R.J. LA HAYE, K.H. BURRELL, M.J. LANCTOT, C.C. PETTY, S.P. SMITH, E.J. STRAIT, M.A. VAN ZEELAND, GA, R. NAZIKIAN, PPPL — Understanding GAMs is important since they are thought to regulate turbulence and transport levels in the outer regions of fusion plasmas. For the first time, two simultaneous, radially-overlapping eigenmode GAMs (constant frequency vs radius) have been observed in the poloidal $E\times B$ flow in L-mode DIII-D plasmas. Intermediate-k density fluctuations ($k_\theta^*\rho_s \sim 1$) are modified by these GAMs. Multi-field oscillations at the GAM frequency are also clearly observed in n_e, T_e, and B_θ. Magnetic GAM activity is much stronger on the high-field side of the tokamak. This unique information provides a new perspective on GAM activity. Direct comparison with global gyrokinetic simulations (GYRO) will be presented to improve understanding.

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