Abstract Submitted
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On fast radial propagation of parametrically excited Geodesic Acoustic Modes[1] LIU CHEN, IFTS, ZJU and UCI, ZHIYONG QIU, IFTS, ZJU , FULVIO ZONCA, ENEA, Frascati — It is known from linear theories that, Geodesic Acoustic Mode (GAM) linear group velocity is due to finite Larmor radius (FLR) effects, and is typically radially outward in consistency with GAM continuum associated with temperature profiles. In this work, we show that, since GAM is linearly stable, nonlinear effects must be considered to explain experimental observations. Our results show that the nonlinearly driven GAM propagates at a much larger group velocity, which is the mean of the linear group velocities of GAM and drift wave turbulence. The nonlinear theories presented here, can also be applied to interpret the discrepancies between the experimentally measured dispersion relation of GAM and that from linear theories. Further implications of these findings for proper understanding of experimental observations are discussed.

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