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Geodesic Acoustic Mode Measurements in DIII-D,* J.C. Hillesheim, W.A. Peebles, T.A. Carter, T.L. Rhodes, L. Schmitz, *UCLA*; and the DIII-D Team, *GA* — Geodesic acoustic modes (GAMs) are nonlinearly driven, axisymmetric (m=0, n=0) *ExB* flows, which may play an important role in establishing the saturated level of turbulence in tokamaks. Doppler backscattering (DBS) measures the flow of turbulent structures and the level of intermediate-k ($k_\perp \rho_s \sim 1\text{-}4$) density fluctuations. Measurements have been made with multichannel DBS systems at toroidal locations separated by 180°. Both linear characteristics of the mode and its nonlinear interactions have been studied. Observations include cases where the GAM exists as a persistent mesoscale structure, coherent over ~1/3 of the minor radius; measurements in repeat shots indicate a poloidal dependence of the GAM's radial wavenumber; and bicoherence analysis between the toroidally separated DBS systems has revealed a relationship between the GAM and low frequency zonal flows.

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