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Applications of 2D BES Turbulence Measurements in DIII-D[1] C. FENZI, R.J. FONCK, M.J. JAKUBOWSKI, G.R. MCKEE, U. Wisconsin, T.N. CARLSTROM, GA — We present here an overview of 2-D density fluctuation measurements performed in DIII-D using the BES diagnostic, new analysis technique results, and discuss future improvements of the present 2-D imaging BES system. Data have been acquired in various plasma modes. During ion ∇B drift experiments, when the ion ∇B drift is directed towards the X-point (low power threshold case for the L-H transition), the time-averaged 2-D flow field plot inferred from the 2-D BES data clearly show a strong phase velocity shear of the density fluctuations near the plasma edge. This velocity shear is not apparent with the ∇B drift away from the X-point. A biorthogonal decomposition technique is applied to these data, allowing for the simultaneous analysis of the temporal and spatial dynamics, in order to isolate and characterize structures in the turbulent signal. Nonlinear algorithms are being developed for mode-mode coupling analysis. To further investigate, a high-resolution fast-framing CCD camera system is under development to extend the field of view in the DIII-D plama cross-section.

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☐ Prefer Oral Session
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Special instructions: 13th poster in Transport Core Session (before Jakubowski, after Rost)

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