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Complex Dynamics of Turbulent Edge Transport in DIII-D[1] R.A. MOYER, D. RUDAKOV, University of California, San Diego, T.L. RHODES, E.J. DOYLE, W.A. PEEBLES, C.L. RETTIG, University of California, Los Angeles, T.E. EVANS, R.J. GROEBNER, P.A. POLITZER, General Atomics, D. TURNEY, Colorado College — It is increasingly clear that in order to make progress on understanding plasma turbulent transport that the plasma-turbulence-transport must be treated as an interacting complex dynamical system. Examples include recent work on self-organized systems, long time/spatial correlations, etc. DIII–D edge data indicate that the plasma is a complex system of turbulence drives, $E_{\rm r}$ shear reduction, phase decorrelation, and avalanche-like (long time/space scale) transport events. We find that ∇T and/or ∇P are more important drives than ∇n; that $E_{\rm r}$ shear reduces turbulent transport by altering fluctuation amplitudes and cross-phases; and that $1/f$ transport events dominate the total edge transport. These results can improve our understanding of the tokamak as a complex, driven-dissipative system.

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☐ Prefer Oral Session
☒ Prefer Poster Session

Special instructions: DIII-D Poster Session 1, immediately following DR Baker

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