

Abstract Submitted
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Sorting Category: 5.1.1.2 (Experimental)

Large Spatial Scale Avalanche Processes in DIII-D¹

P.A. POLITZER, General Atomics, M.E. AUSTIN, U. Texas, E.J. DOYLE, C.L. RETTIG, T.L. RHODES, UCLA, G.R. MCKEE, U. Wisconsin, R.A. MOYER, UCSD, J.G. WATKINS, Sandia National Laboratories — One possible mechanism for transport of heat and particles in plasmas is the avalanche process associated with self-organized criticality. We have found evidence for avalanches in edge and core measurements.^{2,3} Recent experiments with low power, essentially stationary L-mode plasmas have allowed collection of simultaneous core plasma data on electron temperature and density fluctuations using the ECE, BES, and reflectometer diagnostics, and edge data using Langmuir probes. These measurements are examined for evidence of SOC-like behavior. The anticipated characteristics include Fourier spectra (1/f), power-law PDF for events, and extended space-time cross-correlations with power-law tails. Cross-correlations between temperature and density fluctuations should give some indication of the energy transport.

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²T L. Rhodes *et al.*, Phys. Lett. A **253**, 181 (1999).

³P.A. Politzer, Bull. Amer. Phys. Soc. **43**, 1760 (1998).

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Prefer Oral Session
Prefer Poster Session

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Special instructions: DIII-D Poster Session 1, immediately following CL Rettig
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