

Abstract Submitted
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Fluctuations and Correlations in tokamak plasmas¹ B. LI, R.D. HAZELTINE, Department of Physics, Institute for Fusion Studies, University of Texas at Austin — The relation between stationary fluctuations of equilibrium states and irreversible processes is described. The wave-number dependence of spatial correlations in homogeneous systems is obtained from Einstein distribution, and the mean square of fluctuations is then calculated. Using the fluctuation-dissipation theorem and a convective diffusion equation, the power spectrum and auto-correlation function are computed. The results are compared with the observed plasma density fluctuations in tokamak experiments.

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Bo Li
University of Texas at Austin

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