

Chaotic density fluctuations in L-mode plasmas of the DIII-D tokamak

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Analysis of the time series obtained with the Doppler backscattering system (DBS) (Hillsheim J C *et al* 2009 *Rev. Sci. Inst.* 80 0835070) in the DIII-D tokamak (Luxon J L 2005 *Fusion Sci. Technol.* 48 828) shows that intermediate-wavenumber plasma density fluctuations in low confinement (L-mode) tokamak plasmas are chaotic. The supporting evidence is based on the shape of the power spectrum; the location of the signal in the complexity-entropy plane (C-H plane) (Rosso O A *et al* 2007 *Phys. Rev. Lett.* 99 154102); and the population of the corresponding Bandt-Pompe (2002 *Phys. Rev. Lett.* 88 174102) probability distributions.