

Abstract Submitted
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Electron temperature fluctuation measurements in the I-mode pedestal at ASDEX Upgrade¹ RACHEL BIELAJEW, MIT, G.D. CONWAY, IPP, P. MOLINA CABRERA, P. RODRIGUEZ-FERNANDEZ, A.E. WHITE, C. YOO, MIT, TEAM THE ASDEX UPGRADE, IPP — I-mode is a naturally ELM-free improved confinement regime, which exhibits high energy confinement without high particle confinement. The role of edge turbulence in heat and particle transport and the role of the Weakly Coherent Mode (WCM) in decoupling these transport channels are open questions. Measurements of electron temperature fluctuations can be obtained using a Correlation Electron Cyclotron Emission (CECE) diagnostic, which measures long wavelength electron temperature fluctuation amplitudes, spectra, and correlation lengths. This work presents edge and pedestal ($\rho_{\text{pol}}=0.9-1.0$) temperature fluctuation measurements in L-mode and I-mode at ASDEX Upgrade from a 24-channel CECE radial comb. In this work, edge modes are localized and the structure of broadband turbulence is compared between the different confinement regimes. In addition to CECE measurements, this work presents linear stability analysis using the gyrofluid code TGLF to characterize the instabilities present and their dependence on radius and confinement regime.

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