

Abstract Submitted
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Edge transport bifurcation in plasma resistive interchange turbulence CONG MENG, XUEYUN WANG, BO LI, Peking University — Transport bifurcation and mean EB shear flow generation in resistive interchange turbulence are explored with self-consistent fluid simulations in a flux-driven system with both closed and open field line regions. The nonlinear evolution of resistive interchange modes shows the presence of two confinement regimes characterized by low and high mean EB shear flows. By increasing the heat flux above a threshold, large-amplitude fluctuations are induced in the plasma edge region and a transition to the state of reduced turbulent transport occurs as the Reynolds power exceeds the fluctuation energy input rate for a sufficient time period. The flux-gradient relationship shows a sharp bifurcation in the plasma edge transport. [B.Li et al., Phys.Plasmas 24,055905(2017)]

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