

# Pedestal dynamics in inter-ELM phase on HL-2A tokamak

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Streamer, as well as zonal flow is a very challenging subject since it is expected to have significant effects on confinement in high temperature plasmas. Theoretical simulation predicts that streamers originate from the nonlinear development of turbulence driven by electron and ion temperature gradient. In experiments, few works have reported the streamer observation only up to now, and detailed analysis of the streamer dynamics is still a lack, in spite of its importance in the understanding of plasma confinement in toroidal fusion devices. Here we report the first observation of streamer formation in the HL-2A edge plasmas in inter-ELM phases. The streamer is developed from turbulence via a quasi-coherent mode which interacts with and modulates ambient turbulence, induces an inward particle flux, and plays an essential role in the pedestal dynamics in the inter-ELM phases. Detailed results on the streamer characteristics and its role in triggering the ELM will also be presented.

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