

Abstract Submitted
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Bifurcation to Expanded H-mode Pedestal Width and Height with Lithium Dust Injection in DIII-D¹ R. MAINGI, D.K. MANSFIELD, D.J. BATTAGLIA, B. GRIERSON, R. NAZIKIAN, A.L. ROQUEMORE, PPPL, G.L. JACKSON, T.H. OSBORNE, C. CHROBAK, J.S. DEGRASSIE, R.J. GROEBNER, P.B. SNYDER, GA, Z. YAN, G.R. MCKEE, U. Wisc, A.G. MCLEAN, LLNL, DIII-D TEAM — Lithium (Li) aerosol injection into the SOL of the DIII-D tokamak has facilitated a rapid $\sim 100\%$ expansion of the H-mode pedestal width in a class of ELMy discharges. ELM-free H-modes with τ_E increasing by $< 60\%$ are observed; the radiated power held steady during ELM-free periods. The pedestal T_e and P_e doubled, while the T_i increased by $\sim 20\%$. Substantial L_i density was observed in the core, reaching up to 15% at the top of the pedestal. The onset of a continuous pedestal-localized instability measured on beam emission spectroscopy correlated with the pedestal expansion, which can occur on a < 10 ms timescale. These enhanced pedestals are limited by onset of giant ELMs, which appear to be consistent with ideal stability calculations.

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