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Impact of Lithium Injection on the H-mode Pedestal in DIII-D,* T.H. Osborne, G.L. Jackson, C. Chrobak, J.S. deGrassie, R.J. Groebner, P.B. Snyder, *GA*; R. Maingi, D.K. Mansfield, D.J. Battaglia, B.A. Grierson, R. Nazikian, A.L. Roquemore, *PPPL*; Z. Yan, G.R. McKee, *U Wisc*; A.G. McLean, *LLNL*; DIII-D Team – Lithium injection into ELMy H-mode discharges triggered unusual, up to 350ms, ELM-free periods (EFPs) during which the pedestal width, w_{PED} , increased on a short time scale $\approx 10\text{ms}$ reaching $2\times$ the width seen in the ELMy phase. The electron pedestal pressure in EFPs with Li was $2\times$ that of the ELMy phase and $1.5\times$ that of similar e was reduced by similar factors in EFPs with Li. Rapid w_{PED} expansion and enhanced particle transport was associated with pedestal localized density fluctuations seen on BES. w_{PED} during EFPs with Li was 40% larger than predicted by EPED1.0 scaling, while w_{PED} in EFPs without Li agreed with this scaling. EFPs terminated in a large ELM when the peeling-ballooning mode stability limit was reached. Sustainment of large w_{PED} , P_{PED} could open a regime of improved energy confinement and high β stability.

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