

Abstract Submitted
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H-mode Pedestal Enhancement and Improved Confinement in DIII-D with Lithium Injection¹ G.L. JACKSON, T.H. OSBORNE, GA, R. MAINI, D.J. BATTAGLIA, D.K. MANSFIELD, A.L. ROQUEMORE, B.A. GRIERSON, PPPL, C.P. CHROBAK, UCSD, A.G. MCLEAN, LLNL, G.R. MCKEE, Z. YAN, U. Wisc. — Lithium has been injected into DIII-D discharges leading to larger density and temperature pedestal widths and pedestal pressure increases. The lithium injection allowed transitions from ELMing to ELM free H-mode with energy confinement improvements up to 70%, compared to similar discharges without lithium. Lithium was injected directly into the plasma and SOL as an aerosol (44 μm dia particles) using a “lithium dropper” with no increase in radiated power. The lithium injection also led to density fluctuations of up to 8% in the pedestal region in the frequency range $\approx 40 - 150$ kHz, measured by the BES diagnostic [1]. We will discuss experiments to obtain ELM-free performance and enhanced pedestals with lithium, EPED modeling to determine proximity to the peeling-ballooning boundary, and conditions for obtaining reduced recycling.

[1] Z. Yan, et al., these proceedings

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