

Abstract Submitted
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Gyrokinetic turbulence simulations of the pedestal region at various lithium doses in NSTX¹ MIREILLE COURY, WALTER GUTTENFELDER, DAVID R. MIKKELSEN, Princeton Plasma Physics Laboratory, JOHN M. CANIK, Oak Ridge National Laboratory, AHMED DIALLO, RAJESH MAINGI, Princeton Plasma Physics Laboratory — It is shown that lithium-coated walls alter the pedestal structure by, for instance, improving the energy confinement and reducing recycling.^{2,3} Recent work⁴ shows improved discharge characteristics with increasing lithium doses in highly shaped discharges. Edge-localized modes triggered by large edge pressure and current gradients are altered, even suppressed with increasing lithium doses. In this work, the plasma edge characteristics under increasing lithium doses are investigated with GS2 gyrokinetic code.⁵ Using experimental discharges as input parameters, microinstabilities are investigated in the pedestal region and the effect of increasing lithium doses on these microinstabilities is discussed.

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²R. Maingi *et al.*, *Nucl. Fus.*, **52**(2012)

³J.M. Canik *et al.*, *Nucl. Fus.*, **53** (2013)

⁴R. Maingi *et al.*, *J. Nucl. Mat.*, **463** (2015)

⁵M. Kotschenreuther *et al.*, *Comp. Phys. Commun.*, **88** (1995)

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