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Effect of lithium wall conditioning on heat flux widths and SOL transport in NSTX[1] TRAVIS GRAY, JOON-WOOK AHN, ADAM MCLEAN, RAJESH MAINGI, Oak Ridge National Laboratory, MICHAEL JAWORSKI, Princeton Plasma Physics Laboratory, VSEVOLOD SOUKHANOVSKII, Lawrence Livermore National Laboratory, OAK RIDGE NATIONAL LABORATORY COLLABORATION, PRINCETON PLASMA PHYSICS LABORATORY COLLABORATION, LAWRENCE LIVERMORE NATIONAL LABORATORY COLLABORATION — Peak heat fluxes in NSTX of up to 15 MW/m^2 have been measured on the divertor during high performance (I_p = 1.2 MA, P_{NBI} = 6 MW, $\delta \sim 0.7$) H-mode discharges. While the plasma facing components on NSTX consist of ATJ graphite, a program of lithium wall conditioning has been used in place of boronization. The effect on NSTX discharges has been to improve energy confinement, reduce ohmic flux consumption therefore extending the discharge lifetime, and the elimination of Edge Localized Modes (ELMs) when sufficient lithium is applied. However, when lithium wall conditioning is used, the heat flux footprint as measured by IR thermography contracts by 50-60%. The implications for transport in the scrape-off layer (SOL) and the impact on divertor heat flux will be presented.

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