

Abstract Submitted  
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**Mass changes in NSTX surface layers with Li conditioning as measured with quartz microbalances**<sup>1</sup> C.H. SKINNER, H.W. KUGEL, A.L. ROQUEMORE, Princeton Plasma Physics Laboratory — Three quartz crystal microbalances are deployed in plasma shadowed areas in NSTX at the upper and lower divertor and outboard midplane. Pulse-by-pulse material gain and loss (dynamic retention) is measured with a sensitivity of a fraction of an atomic monolayer. At the time of a plasma discharge a transient increase in mass of order  $0.1 \mu\text{g}/\text{cm}^2$  is seen. This decays in the interpulse period to a level either higher, lower or similar to that prior to the discharge. Following a days plasma operations a loss in mass is observed over several hours that parallels the deuterium outgassing. For the first discharge of the day, the relatively unsaturated hydrocarbon layer shows a step-up in mass independent of plasma conditions. In 2007 lithium was evaporated onto plasma facing components to control recycling. We will present data on the mass changes of surface layers with and without lithium coatings.

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Charles Skinner  
Princeton Plasma Physics Laboratory

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