

Abstract Submitted  
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**MHD Induced Neutral Beam Ion Loss from NSTX<sup>1</sup>** DOUGLASS DARROW, ERIC FREDRICKSON, NIKOLAI GORELENKOV, LANE ROQUEMORE, PPPL, NEAL CROCKER, UCLA, KOUJI SHINOHARA, JAEA — Bursts of MHD activity at  $\sim 60$  kHz occur commonly in NSTX plasmas, particularly at high beta, and are accompanied by neutral beam ion loss over a range in pitch angles. The pitch angle and energy distributions of these losses have been measured with a scintillator type loss probe viewed by a high speed video camera. The data from one representative burst that causes a 13% reduction in the neutron rate has been studied thoroughly and has several interesting features. At first, the mode has a purely  $n=1$  character, sweeping downward in frequency. There is no change to the underlying prompt loss signal during this interval, indicating there is no phase space transport of fast (80 keV D) ions into the loss cone from the frequency sweeping. Later, a concurrent  $n=2$  mode arises, followed quickly by a concurrent  $n=3$  mode. When multiple modes are present, loss is seen over a wide range of pitch angles, suggesting stochastization of the beam ion orbits. There is no evidence of any sweeping in pitch angle of the loss in either phase of the burst, at least not on the 100  $\mu$ s time scale.

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Douglass Darrow  
PPPL

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