MHD Induced Neutral Beam Ion Loss from NSTX*

D. S. Darrow, E. Fredrickson, A. L. Roquemore
PPPL
K. Shinohara
JAEA

A high speed (>10,000 frames/s) video camera was used to record the energy and pitch angle distributions of neutral beam ions lost from NSTX plasmas during MHD activity, including fishbone instabilities. MHD instabilities have previously been seen to augment loss of beam ions at the largest (most perpendicular) pitch angles. During fishbone bursts, the fast camera images reveal loss of full energy (80 keV D) ions over a range of pitch angles simultaneously, with no evidence that the loss is sweeping in pitch angle, at least not on the 100 microsecond time scale.

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