

Abstract Submitted  
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**Effects of TAE avalanches and energetic particle mode bursts in NSTX on neutral beam ion confinement, loss, and current drive<sup>1</sup>**  
DOUGLASS DARROW, PPPL, ALESSANDRO BORTOLON, UC Irvine, NEAL CROCKER, UCLA, ERIC FREDRICKSON, NIKOLAI GORELENKOV, MARINA GORELENKOVA, PPPL, SHIGEYUKI KUBOTA, UCLA, DEYONG LIU, UC Irvine, MARIO PODESTÀ, ROSCOE WHITE, PPPL — Brief “avalanches” of toroidal Alfvén eigenmodes (TAEs) are observed in NSTX plasmas having several different n numbers simultaneously present. Modeling has shown that these cause stochastic loss of neutral beam ions along with rapid reduction in the energy of some beam ions. Here we make initial comparisons of the modeled distributions with confined beam ion measurements, including FIDA and ssNPA. In addition, initial results of modeled changes to the beam driven current profile will be shown. Finally, we describe efforts to apply the measurement and modeling methods to energetic particle mode bursts that are ubiquitous in the plasma current ramp up phase of NSTX discharges.

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