

Abstract Submitted  
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**Suppression of Alfvénic modes with off-axis NBI\*** ERIC FREDRICKSON, R BELL, A DIALLO, B LEBLANC, M PODESTA, pppl, F LEVINTON, H YUH, Nova Photonics, D LIU, UCI — GAE are seen on NSTX-U in the frequency range from 1 to 3MHz with injection of the more perpendicular, NSTX neutral beam sources. A new result is that injection of any of the new, more tangential, neutral beam sources with tangency radii larger than the magnetic axis suppress this GAE activity. Simulations of beam deposition and slowing down with the TRANSP code indicate that these new sources deposit fast ions with  $0.9 < \text{pitch} < 1$ . The observations are consistent with the theory of resonant drive for counter-propagating GAE [Gorelenkov, NF 43 (2003) 228], which predicts only fast ions with large Larmor radius are destabilizing, i.e., very tangential fast ions will be stabilizing. Estimates of these parameters support this qualitative prediction. Experiments have shown complete suppression of GAE with <30% of the total injected beam power in the stabilizing sources. This may provide a tool to control or mitigate GAE instabilities by tailoring the NB injection profile through a mix of the available NB sources. Work supported by U.S. DOE Contract DE-AC02-09CH11466.

Eric Fredrickson  
PPPL

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