

Abstract Submitted  
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**Effects due to nonlinear modification of driven current on tearing mode stabilization** GE DONG, ALLAN REIMAN, NATHANIEL FISCH, Princeton Plasma Phys Lab — Neoclassical tearing modes (NTMs) can be destabilized by a helical perturbation in the bootstrap current, and can result in large magnetic islands which are detrimental to confinement in toroidal plasma devices. NTM stability properties and dynamics can be strongly affected by current drive in various scenarios. The modified Rutherford equation is generally used to calculate the contributions from the current drive, without considering the self-consistent change in the driven current associated with the nonlinear effects. In this study, we evaluated the importance of such nonlinear effects as the effect of the change in  $T_e$  on the current drive efficiency, and the nonlinear interaction of the current drive and the electric field.

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