

Abstract Submitted
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Fast Ion Profiles in Plasmas With Alfvén Instabilities,¹ W.W. HEIDBRINK, Y. LUO, E. RUSKOV, U. California-Irvine, G.J. KRAMER, N.N. GORELENKOV, R. NAZIKIAN, R. WHITE, Princeton Plasma Physics Laboratory, M.A. VAN ZEELAND, Oak Ridge National Laboratory — Fast-ion redistribution is observed in plasmas with many different types of Alfvén eigenmode (AE) activity: toroidicity-induced (TAE), reversed shear (RSAE), elongation induced (EAE), and beta-induced (BAE). AE wave fields calculated by the NOVA code and benchmarked against experimental measurements are used to predict the modification of the fast-ion distribution function. These predictions are compared with profiles measured by the fast-ion D_α diagnostic, as well as fast-ion profiles inferred from the equilibrium. Neutron, neutral particle, and beam-ion loss detector diagnostics are also employed. In cases with strong AE activity, the central fast-ion profile is often flat.

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