Fast-Ion Profiles During Ion Cyclotron Heating,* E. Ruskov, W.W. Heidbrink, Y. Luo, U. California-Irvine, M. Choi, R.I. Pinsker, General Atomics – Fast wave heating at the 4th-8th harmonic is combined with neutral beam injection. For 60 MHz heating at the 4th-6th harmonic, an energetic deuterium tail is observed by the fast-ion D_α (FIDA) diagnostic [1,2]. FIDA profiles are compared with the fast-ion profiles inferred from the equilibrium, as well as neutral particle data. Under some conditions, enhanced losses of fast ions at the vessel wall occurs during the rf. The fast-ion tail is largest near the resonance layer. For 116 MHz heating at the 8th harmonic, little evidence of a fast-ion tail is observed, even in higher density plasmas where fast-ion absorption was originally predicted. The FIDA spectra and profiles for cases with and without fast-ion heating are compared with calculations of the expected fast-ion acceleration.


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