

Abstract Submitted
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New Measurements of Fast-ion Transport¹ W.W. HEIDBRINK, C.M. MUSCATELLO, D.C. PACE, Y.B. ZHU, UC Irvine, M.A. VAN ZEELAND, R.K. FISHER, General Atomics, W.M. SOLOMON, PPPL, M. GARCIA-MUNOZ, IPP Garching — Many new fast-ion diagnostics were commissioned during the 2010 campaign, including a scintillator-based fast-ion loss detector, high bandwidth neutral-particle analyzers and fast-ion D_α (FIDA) detectors, spectroscopic FIDA views that are sensitive to co-passing ions, and improved FIDA imaging capabilities. Fluctuations at mode frequencies are detected during Alfvén eigenmodes, neoclassical tearing modes, energetic-particle driven geodesic acoustic modes, and $q = 2$ fishbones. The transport of passing and trapped ions differ at the sawtooth crash. Drift-wave transport is more evident in lower-energy channels than in higher-energy channels. High time resolution toroidal rotation measurements detect local sub-millisecond changes associated with non-ambipolar fast-ion transport.

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