Abstract Submitted
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Recent Advances in Alfvén Eigenmode Research on DIII-D[1] R. NAZIKIAN, N.N. GORELENKOV, G.J. KRAMER, PPPL, M.E. AUSTIN, H.L. BERK, U. Texas-Austin, W.W. HEIDBRINK, UC-Irvine, G.R. MCKEE, M.W. SHAFER, U. Wisc.-Madison, E.J. STRAIT, M.A. VAN ZEELAND, General Atomics — Previous studies have revealed a large anomalous redistribution of fast ions in DIII-D in the presence of Alfvén eigenmodes (AEs). Rapid progress has been made in the last year on understanding AEs and their effects on fast ion transport in reverse magnetic shear plasmas on DIII-D. New transport simulations taking account of the compressional component of the shear Alfvén modes, together with the frequency sweeping of the observed instabilities, produces much high transport levels than previous estimates. Validating the mode structure used in simulation is essential. The results on the simultaneous measurement of the temperature (ECE) and density (BES) fluctuation profile of AEs will be shown and compared to theory. These measurements enable a stringent test of kinetic theory for the plasma response to shear Alfvén waves in fusion plasmas.

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C.C. Petty
General Atomics

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