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Central Flattening of the Fast-Ion Profile in Reversed-Shear Discharges With Alfvén Eigenmode Activity[1] W.W. HEIDBRINK, Y. LUO, C. MUSCATELLO, UC-Irvine, N.N. GORELENKOV, R.B. WHITE, PPPL, M.A. VAN ZEELAND, GA, G. VLAD, Euratom-ENEA — Neutral beam injection into a plasma with reversed shear produces a rich spectrum of Alfvén eigenmodes (AE) in DIII-D. Application of fast-ion D_α (FIDA) spectroscopy shows that the central fast-ion profile is anomalously flat in the inner half of the discharge. Neutron and equilibrium measurements corroborate the FIDA data. The temporal evolution of the current profile is strongly modified. Calculations by the ORBIT code do not explain the observed fast-ion transport for the measured mode amplitudes. A simulation of this discharge with the HMGC code suggests that transient energetic particle modes may be primarily responsible for the fast-ion transport, while the experimentally obvious toroidal AE (TAE) and reversed shear AE (RSAE) may be relatively unimportant. A search for the predicted energetic particle modes is planned. An empirical study of the correlation of profile flattening with varying amounts of Alfvén activity in different discharges will also be presented.

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