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**Effect of Reverse Shear Alfvén Eigenmodes on Delivered Neutral Beam Torque**[1] W.M. SOLOMON, R.V. BUDNY, G.J. KRAMER, D. MIKKELSEN, R. NAZIKIAN, S.D. SCOTT, M.C. ZARNSTORFF, PPPL, K.H. BURRELL, J.S. DEGRASSIE, C.C. PETTY, M.A. VAN ZEELAND, GA — Modifications to the torque deposition profile from neutral beam injection is investigated under varying levels of reverse shear Alfvén eigenmode (RSAE) activity. The rotation profile is found to be altered in the presence of strong RSAE activity, but the total mechanical angular momentum appears relatively independent of the RSAE intensity. This indicates that the neutral beam ions are being redistributed in the presence of RSAEs, rather than lost, consistent with present understanding of how RSAEs affect fast ions. Analysis of the momentum transport channel provides a technique for determining how the fast ions are redistributed. In particular, by matching the local momentum diffusivity and global momentum confinement time for plasmas with strong RSAEs with plasmas without RSAEs, one can precisely infer the modification to the neutral beam torque profile from the classical prediction, and estimate the anomalous fast ion diffusion caused by the RSAEs.

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