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Rotation Modified Equilibrium Solutions in TRANSP/PTRANSP¹ R. ANDRE, D. MCCUNE, J. MENARD, PPPL, L. LODESTRO, D. PEARLSTEIN, LLNL — Neutral beam injection is used with NSTX to achieve high beta discharges. This can lead to significant toroidal rotation such that the centrifugal pressure becomes a significant fraction of the total plasma pressure. Under these conditions, it has been shown that the particle densities are no longer flux surface functions with a resulting modification of the equilibrium solution. While TRANSP/PTRANSP has traditionally supported an additional contribution to the plasma pressure due to rotation, the total pressure has been assumed to be a flux surface quantity. Accounting for the radial dependence of the pressure caused by rotation requires a modification to the underlying Grad-Shafranov equation. This poster will describe the status of adding the rotation terms to the TEQ and other equilibrium solvers in TRANSP/PTRANSP and the effect they have on the flux surface representation in NSTX. The rotation is assumed to be purely toroidal with the rotation frequency and species temperatures represented as flux surface quantities.

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