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**AT Scenario Modeling For DIII-D and ITER<sup>1</sup>** H.E. ST JOHN, L.L. LAO, G.M. STAEBLER, General Atomics, M. MURAKAMI, ORNL, J.E. KINSEY, Lehigh U. — Recent significant upgrades to the ONETWO transport code include the GLF23 confinement model, a time dependent Monte Carlo Beam Package,<sup>2</sup> and a new non linear PDE solver for time-dependent as well as time-independent solutions of the coupled set of transport equations. In this work we briefly describe the integration of these tools into our modeling effort and then show some applications for DIII-D and ITER advanced tokamak discharges. The complex interaction between the bootstrap, rf, and beam driven currents, and internal transport barrier formation and alpha stabilization is investigated. The confinement model used in these simulations is the new renormalized model extended to negative central shear version of GLF23. We will show how off-axis ECCD using the TORAY GA ray tracing code can be used to control the q profile and generate near steady state discharges with essentially zero ohmic current and bootstrap current fractions of greater than 50%.

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<sup>2</sup>Nubeam, NTCC module, D. Mcune, C. Luescher, <http://w3.pppl.gov/rib/repositories/NTCC/catalog/Asset/nubeam.html>.

- Prefer Oral Session  
 Prefer Poster Session

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