

Abstract Submitted
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New predictive capabilities in PTRANSF with PTSOLVER¹
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BLER, GA, GREG HAMMETT, PPPL — A new implicit transport equation solver
(PT-SOLVER) implemented in predictive TRANSP (PTRANSF) is used to inte-
grate the highly nonlinear time-dependent transport equations using implicit Newton
iteration methods. Capabilities are extended to include density and angular momen-
tum prediction. The new solver allows users to choose between different transport
models via a standard namelist input. A wide range of neoclassical and/or turbulent
models or semi-empirical, including TGLF choices are available. Extensive bench-
mark test runs have been performed with PT-SOLVER using the TGLF parallelized
over flux-surfaces and wavenumbers. A combined number of CPUs up to 128 have
been used. The new solver is robust, efficient, and allows large time-steps to be used.
PTRANSF predicted temperatures have also been compared with experimental data
for various plasma regimes, and good agreement has been achieved.

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