

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

TGLF Transport Modeling With PTRANSP/GCNMP¹ H.E. ST. JOHN, L.L. LAO, G.M. STAEBLER, J.E. KINSEY, P.B. SNYDER, GA, R.V. BUDNY, D. MCCUNE, PPPL — We describe our effort in getting the turbulent TGLF confinement model operational with the PTRANSP transport code. Numerically intensive, TGLF requires parallel operation for determination of turbulent fluxes. This has driven our interface design to PTRANSP and motivated the purchase of a small parallel computing cluster for development. We note that larger clusters would be appropriate to exploit further parallel structure present in TGLF. A direct flux solver was developed to solve both the time-dependent and time-independent transport equations over a variable radial transport grid. A universal communication scheme based on netcdf data representation is under continuing development that will allow translation of PTRANSP, ONETWO, GCNMP, XPTOR, and GYRO code run time information from any of the codes to any other. Cross validation of results thus becomes much more feasible. Our initial efforts comparing XPTOR and PTRANSP/GCNMP calculations are discussed. Our initial foray into EPED1 type edge stability analysis is described.

¹Work supported by the US DOE under DE-FG02-07ER54935 and DE-AC02-09CH11466.

Lang Lao
General Atomics

Date submitted: 16 Jul 2009

Electronic form version 1.4