

Abstract Submitted
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Progress of Time-dependent Transport Simulations Using GYRO and Neoclassical Models Within FACETS¹ S. VADLAMANI, Tech-X Corp., A.Y. PANKIN, Lehigh University, S. KRUGER, J. CARLSSON, J. CARY, A. PLETZER, Tech-X Corp., J. CANDY, A. COLLIER, General Atomics, M. FAHEY, ORNL, FACETS TEAM — Progress on the integration of the turbulent transport code GYRO and the neoclassical codes such as NCLASS into the FACETS (Framework Application for Core-Edge Transport Simulations) framework through the use of a multi-language Fortran/C/C++ friendly FMCFM (Framework for Modernization and Componentization of Fusion Modules) interface is presented. The FMCFM framework provides a common interface to varying fusion transport modules and libraries such as those in the National Transport Code Collaboration (NTCC) module library [1]. The interlanguage wrapper code is automatically generated. First results of coupled GYRO-NCLASS-FACETS simulations using realistic initial profiles and particle/heat sources are presented.

[1] A. H. Kritz *et al.* *Comp. Phys. Communications* **164**, 108 (2004)

[2] See A. Pankin's *et al.* presentation on transport models in FACETS (Sherwood 2009)

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