Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

IMFIT Integrated Modeling Applications Supporting Experimental Analysis: Multiple Time-Slice Kinetic EFIT Reconstructions, MHD Stability Limits, and Energy and Momentum Flux Analyses[1] A. COLLIER, L.L. LAO, G. ABLA, M.S. CHU, R. PRATER, S.P. SMITH, H.E. ST. JOHN, General Atomics, W. GUO, G. LI, C. PAN, Q. REN, ASIPP, J.M. PARK, ORNL, N. BISAI, R. SRINIVASAN, IPR, A.P. SUN, SWIP, Y. LIU, DUT, M. WORRALL, CSM — This presentation summarizes several useful applications provided by the IMFIT integrated modeling framework to support DIII-D and EAST research. IMFIT is based on Python and utilizes modular task-flow architecture with a central manager and extensive GUI support to coordinate tasks among component modules. The kinetic-EFIT application allows multiple time-slice reconstructions by fetching pressure profile data directly from MDS+ or from ONETWO or PTRANSP. The stability application analyzes a given reference equilibrium for stability limits by performing parameter perturbation studies with MHD codes such as DCON, GATO, ELITE, or PEST3. The transport task includes construction of experimental energy and momentum fluxes from profile analysis and comparison against theoretical models such as MMM95, GLF23, or TGLF.

[1]Work supported by US DOE under DE-FG02-95ER54309 and DE-AC05-00OR22725.

A. Collier
General Atomics

Date submitted: 17 Jul 2010 Electronic form version 1.4