

**Abstract Submitted for the 50th Annual Meeting  
Division of Plasma Physics  
November 17-21, 2008, Dallas, Texas**

Category Number and Subject: 5.6.2 DIII-D Tokamak

Theory     Experiment

**Developments of an Integrated Modeling Tool to Support DIII-D and EAST Research,\*** L.L. Lao, G. Abla, M.S. Chu, H.E. St. John, R. Prater, V.S. Chan, GA, W. Guo, G. Li, C. Pan, Q. Ren, J. Qian, S.J. Wang, B. Wan, J. Li, ASIPP, Y.M. Jeon, ORISE, J.M. Park, ORNL, R. Srinivasan IPR – Integrated modeling is an important element of tokamak research essential to the interpretation and planning of experiments, and the design and construction of next step devices. This presentation summarizes the development of a modern efficient integrated modeling and fitting tool IMFIT to support key elements of the DIII-D and EAST experimental programs. The goal is to develop and to validate the capability to understand and predict the behavior of tokamak discharges. The IMFIT framework is based on Python and Common Component Architecture (CCA). IMFIT consists of a Task Manager that interacts with users through GUI and manages various tasks using a number of Component Managers responsible for different physics and service areas such as Equilibrium, Transport, and Stability. The framework makes use of Task List, Task Flow, and Communication files to dynamically generate action sequence to accomplish various tasks. Details will be presented.

\*Work supported by US DOE under DE-FC02-04ER54698, DE-FG03-95ER54309, DE-AC05-06OR23100, and DE-AC05-00OR22725.