Development of an IMFIT Energy Transport Module and Modeling of DIII-D Energy Transport With and Without MHD Activity,* Y.M. Jeon, ORISE, L.L. Lao, H.E. St. John, M.S. Chu, G.M. Staebler, R. Prater, GA, J.M. Park, ORNL, G.Q. Li, Q. Ren, W. Guo, ASIPP — A predictive understanding of energy transport is crucial for tokamak and future burning plasma experiments. MHD activities such as sawteeth oscillations and tearing modes can significantly increase the energy transport. Preliminary results from the analysis of a DIII-D giant-sawtooth discharge show that before the application of FW when the sawteeth are tiny both electron and ion energy transport are reasonably described by the GLF23 and MM95 models. To facilitate the analysis, an energy transport module is being developed for integration into the IMFIT tool. IMFIT provides a convenient platform for testing of theory-based transport models against experimental measurements. Details will be presented including analysis of 3/2 tearing mode effects on the energy flux from the recent DIII-D counter ECCD resistive MHD experiments and testing of the new TGLF transport model that is being implemented into the ONETWO transport code.

*Work supported by US DOE under DE-AC05-76OR00033, DE-FG03-95ER54309, and DE-FC02-04ER54698.