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Theory Experiment

Optimization of Self-consistent DIII-D AT Scenarios With the OMFIT Framework,* O. Meneghini, *ORAU/ORISE*; S.P. Smith, L.L. Lao, *GA* – Integrated modeling is an established technique to obtain improved description of physical processes. OMFIT is a workflow manager designed to facilitate and automate all steps in the modeling/validation/verification process of integrated simulations — specifying the physics to be modeled, retrieving experimental data, running the simulation or analysis, and visualizing the results. In OMFIT modeling tasks are organized into modules, which can be easily combined to create arbitrarily large multi-physics simulations. A unified Graphical User Interface (GUI) oversees all of the aspects in the management of the analyses carried out by users. Most importantly, OMFIT allows integration of existing simulation tools without requiring those tools to comply to any standardized data format. This poster describes OMFIT and presents some applications of the framework, including the self-consistent optimization of DIII-D AT scenarios using a cost-function approach to achieve multiple simultaneous goals.

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