A New System to Monitor Data Analyses and Results of Physics Data Validation Between Pulses at DIII–D

S. Flanagan, J.M. Schachter, and D.P. Schissel

General Atomics, P.O. Box 85608, San Diego, California 92186-5608, USA

A Data Analysis Monitoring (DAM) system has been developed to monitor between pulse physics analysis at the DIII–D National Fusion Facility (http://nssrv1.gat.com:8000/dam). The system allows for rapid detection of discrepancies in diagnostic measurements or the results from physics analysis codes. This enables problems to be detected and possibly fixed between pulses as opposed to after the experimental run has concluded thus increasing the efficiency of experimental time. An example of a consistency check is comparing the experimentally measured neutron rate and the expected neutron emission, RDD0D. A significant difference between these two values could indicate a problem with one or more diagnostics, or the presence of unanticipated phenomena in the plasma. This new system also tracks the progress of MDSplus dispatched data analysis software and the loading of analyzed data into MDSplus. DAM uses a Java Servlet to receive messages, CLIPS to implement expert system logic, and displays its results to multiple web clients via HTML. If an error is detected by DAM, users can view more detailed information so that steps can be taken to eliminate the error for the next pulse.