HTPD 2018

Contribution ID : **335**   Type : **not specified**

8.36 Magnetic Diagnostic Suite of the C-2W Field-Reversed Configuration Experiment

Tuesday, 17 April 2018 16:01 (120)

A fundamental component of any magnetically confined fusion experiment is a firm understanding of the magnetic field. The increased complexity of the C-2W machine warrants an equally enhanced diagnostic capability. C-2W is outfitted with over 700 magnetic field probes of various types. They are both internal and external to the vacuum vessel. Inside, a linear array of innovative in-vacuum annular flux loop / B-dot combination probes provide information about plasma shape, size, pressure, energy, temperature, and trapped flux when coupled with establish theoretical interpretations. A linear array of B-dot probes complement the azimuthally averaged measurements. A Mirnov array of 64 3D probes, with both low and high frequency resolution, detail plasma motion and MHD modal content via singular value decomposition analysis. Internal Rogowski probes measure axial currents flowing in the plasma jet. Outside, every feed-thru for an internal probe has an external axial field probe. There are many external loops that measure the plasma formation dynamics and the total external magnetic flux. The external measurements are primarily used to characterize eddy currents in the vessel during a plasma shot. Details of these probes and the data derived from their signals will be presented.

Primary author(s) :   ROCHE, T. (TAE Technologies, Inc.)

Co-author(s) :   THOMPSON, M. C. (TAE Technologies, Inc.); GRISWOLD, M. (TAE Technologies, Inc.); KNAPP, K. (TAE Technologies, Inc.); KOOP, B. (TAE Technologies, Inc.); OTTAVIANO, A. (TAE Technologies, Inc.); TOBIN, M. (TAE Technologies, Inc.); THE TAE TEAM

Presenter(s) :   ROCHE, T. (TAE Technologies, Inc.); THOMPSON, M. C. (TAE Technologies, Inc.); GRISWOLD, M. (TAE Technologies, Inc.); KNAPP, K. (TAE Technologies, Inc.); KOOP, B. (TAE Technologies, Inc.); OTTAVIANO, A. (TAE Technologies, Inc.); TOBIN, M. (TAE Technologies, Inc.); THE TAE TEAM

Session Classification :   Session #8, Tuesday Afternoon Poster Session