Abstract Submitted
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Predicting Electron and Ion Thermal Transport in EAST Discharges[1] A.H. KRITZ, T. RAFIQ, Lehigh Univ., USA, A.Y. PANKIN, Tech-X Corp., USA, S. DING, H. DU, J. MA, IPP, China, P.T. BONOLI, PSFC, MIT, USA — The Multi-Mode (MMM7.1, T Rafiq et al., Phys. Plasmas 20, 032506 (2013)) and the Trapped Gyro-Landau Fluid (TGLF, G.M. Staebler, et al., Phys. Plasmas 14, 055909 (2007)) anomalous transport models are used in the PTRANSP code to predict the evolution of the electron and ion temperature profiles. Simulations are carried out using PT-SOLVER, a modular, parallel, and multi-regional solver particularly suited for stiff transport models. The predicted temperature profiles are compared with corresponding EAST experimental data. The MMM7.1 and TGLF models compute transport driven by electron and ion temperature gradient modes, and by trapped electron modes. In addition, MMM7.1 computes transport driven by kinetic and resistive ballooning modes. The neoclassical thermal transport is calculated using the NCLASS and NEO modules. The NUBEAM module and the LSC module are used for neutral beam and for lower hybrid heating and current drive. The self-consistent evolution of the equilibrium is obtained using the TEQ equilibrium code. The radial dependence of the contributions of the different instabilities to the anomalous transport is described, and the degree that the MMM7.1 and TGLF transport models yield temperature profiles that are consistent with EAST experimental data is illustrated.

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