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**Predictions of high $Q_{DT}$ in ITER H-mode plasmas**[1] ROBERT BUDNY, Princeton Plasma Physics Laboratory — Time-dependent integrated predictions of performance metrics such as the fusion power $P_{DT}$, $Q_{DT} \equiv P_{DT}/P_{ext}$, and alpha profiles are presented. The PTRANSP code (see R.V. Budny, R. Andre, G. Bateman, F. Halpern, C.E. Kessel, A. Kritz, and D. McCune, Nuclear Fusion **48** 075005, and F. Halpern, A. Kritz, G. Bateman, R.V. Budny, and D. McCune, Phys. Plasmas **15** 062505) is used, along with GLF23 to predict plasma profiles, NUBEAM for NNBI and alpha heating, TORIC for ICRH, and TORAY for ECRH. Effects of sawteeth mixing, beam steering, beam shine-through, radiation loss, ash accumulation, and toroidal rotation are included. A total heating of $P_{ext}$=73MW is assumed to achieve H-mode during the density and current ramp-up phase. Various mixes of NNBI, ICRH, and ECRH heating schemes are compared. After steady state conditions are achieved, $P_{ext}$ is stepped down to lower values to explore high $Q_{DT}$. Physics and computation uncertainties lead to ranges in predictions for $P_{DT}$ and $Q_{DT}$. Physics uncertainties include the L→H and H→L threshold powers, pedestal height, impurity and ash transport, and recycling. There are considerably more uncertainties predicting the peak value for $Q_{DT}$ than for $P_{DT}$.

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