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Effects of plasma parameters on temperature and density pedestals in ITER scenarios[1] T. RAFIQ, Lehigh Univ, J. WEILAND, E. SCHUSTER, Lehigh University, LEHIGH PLASMA GROUP COLLABORATION — ITER temperature and density pedestals are computed using Weiland anomalous transport model. The neoclassical transport is calculated using NCLASS or Chang-Hinton model. The effects of plasma parameters on electron temperature, electron density and ion temperature pedestal height and width are computed. The current density, magnetic field strength, edge density fueling, neoclassical ion diffusivity, alpha heating, and flow shear are varied. The simulations are started with prescribed sources and a guessed L-mode profile and evolve to L-H transition and temperature and density pedestal self-consistently. There are no assumptions in the simulations that suggest that there will be an L-H transition or where the temperature and density barrier should be. An L to H mode transition can be obtained by either stabilization due to pressure gradient driven shear flow or diamagnetic effects. The goal of these integrated ITER simulations is to investigate the sensitivity of fusion power production in ITER to the height of the density and temperature pedestal.

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