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Category Number and Subject: 5.6.2. DIII-D Tokamak

[] Theory [X] Experiment

Evolution of Edge Pedestal Profiles Over the L-H Transition, M.S. Sayer, W.M. Stacey, J.-P. Floyd, *Georgia Institute of Technology*; and R.J. Groebner, *General Atomics* – The detailed time evolution of thermal diffusivities, electromagnetic forces, pressure gradients, particle pinch and momentum transport frequencies (which determine the diffusion coefficient) have been analyzed during the L-H transition in a DIII-D discharge. Density, temperature, rotation velocity and electric field profiles at times just before and after the L-H transition are analyzed in terms of these quantities. The analysis is based on the fluid particle balance, energy balance, force balance and heat conduction equations, as in Ref. [1], but with much greater time resolution and with account for thermal ion orbit loss. The variation of diffusive and non-diffusive transport over the L-H transition is determined from the variation in the radial force balance (radial electric field, $V \times B$ force, and pressure gradient) and the variation in the interpreted diffusive transport coefficients.

[1] W.M. Stacey and R.J. Groebner, *Phys. Plasmas* **17**, 112512 (2010).

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