## Abstract Submitted for the DPP17 Meeting of The American Physical Society

Gyrokinetic simulations of DIII-D near-edge L-mode plasmas<sup>1</sup> TOM NEISER, FRANK JENKO, TROY CARTER, LOTHAR SCHMITZ, GABRIELE MERLO, UCLA, DANIEL TOLD, ALEJANDRO BANON NAVARRO, MPI of Plasma Physics- Garching, GEORGE MCKEE, ZHENG YAN, UW-Madison — In order to understand the L-H transition, a good understanding of the L-mode edge region is necessary. We perform nonlinear gyrokinetic simulations of a DIII-D L-mode discharge with the GENE code in the near-edge, which we define as  $\rho_{tor} \ge 0.8$ . At  $\rho = 0.9$ , ion-scale simulations reproduce experimental heat fluxes within the uncertainty of the experiment. At  $\rho = 0.8$ , electron-scale simulations reproduce the experimental electron heat flux while ion-scale simulations do not reproduce the respective ion heat flux due to a strong poloidal zonal flow. However, we reproduce both electron and ion heat fluxes by increasing the local ion temperature gradient by 80%. Local fitting to the CER data in the domain  $0.7 \le \rho \le 0.9$  is compatible with such an increase in ion temperature gradient within the error bars. Ongoing multi-scale simulations are investigating whether radial electron streamers could dampen the poloidal zonal flows at  $\rho = 0.8$  and increase the radial ion-scale flux.

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Tom Neiser UCLA

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