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Effect of the Ion Grad B Drift Direction on the Edge Plasma, Divertor, and H-mode Power Threshold in DIII-D¹ T.N. CARLSTROM, R.J. GROEBNER, D.M. THOMAS, General Atomics, R.J. COLCHIN, R. MAINGI, Oak Ridge National Laboratory, M.E. FENSTERMACHER, Lawrence Livermore National Laboratory, R.A. MOYER, University of California, San Diego, J.G. WATKINS, Sandia National Laboratories — Significantly different local conditions near the x-point are measured for otherwise similar global plasma parameters when comparing low power, L-mode plasmas, where the only operational difference is the direction of the toroidal field. For equal input powers, the edge plasma $n_{\rm e}$ and $T_{\rm e}$ and their gradients are roughly the same for the two cases. However, the divertor conditions are very different. When the ion ∇B drift is toward the x-point (low power threshold) the divertor recycling level and density are high and $T_{\rm e}$ near the x-point is low. These characteristic reverse when the ion ∇B drift is away from the x-point. The influence of these and other measurements on models for the L-H transition are examined. Models for the L-H transition are examined.

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Prefer Oral Session	carlstrom@gav.gat.com
X Prefer Poster Session	General Atomics
Special instructions: DIII-D Poster Session I (transport, turbulence	ce, & stability), immediately
following Thomas	

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