Abstract Submitted
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Investigation of Divertor Heat Flux Width in DIII-D for 2010 Joint Research Target[1] C.J. LASNIER, M.A. MAKOWSKI, D.N. HILL, LLNL, J.A. BOEDO, UCSD, N.H. BROOKS, A.W. LEONARD, W.P. WEST, General Atomics, J.D. ELDER, U. Toronto, J.G. WATKINS, SNL — The 2010 Joint Research Target for NSTX, C-Mod, and DIII-D aims to improve prediction of divertor heat flux profile width for future divertors. In DIII-D we varied input power, toroidal field, plasma current I_p, and density. Divertor heat flux was obtained using IR thermography. We find that $w_{q,div}$ is most sensitive to I_p. Mapped to the outer midplane $w_{q,div}$ scaled like $w_{q,mid}$ (mm) $= 5.38/I_p^{1.24}$ (MA). Scrape-off layer and pedestal density and temperature fluctuations were measured using midplane and x-point plunging Langmuir probes at the lower powers. From midplane fluctuation data, we obtained energy transport measurements, which we compare with transport coefficients obtained from onion-skin modeling using density profiles, and with experimentally determined heat flux widths in the divertor.

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Tony Leonard
General Atomics

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