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Divertor heat flux profiles in negative triangularity DIII-D discharges[1] F. SCOTTI, C.J. LASNIER, LLNL, J. LORE, ORNL, A. MARINONI, MIT-PSFC, M.E. AUSTIN, U. Texas, S.L. ALLEN, LLNL — L-mode discharges with negative upper triangularity (δ_u) shape in DIII-D exhibited wider scrape-off layer (SOL) power fall off lengths (λ_q) compared to H-mode discharges with similar shaping. Lower single null diverted discharges with negative upper triangularity and near zero lower triangularity were developed in DIII-D at plasma current I_p=900kA with neutral beam (P_{NBI}=4-13MW) and electron cyclotron heating (P_{ECH}=1.5 MW). SOL power fall-off lengths were derived from upstream Thomson scattering profiles and divertor infrared thermography. The inter-ELM λ_q measured in a negative upper triangularity (δ_u $\sim$-0.2) H-mode discharge was comparable with those measured in H-mode discharges with positive δ_u. The SOL power fall off length in L-mode discharges with δ_u $\sim$-0.4 was up to 50% larger than in the similarly-shaped H-mode plasma. λ_q in negative triangularity L-mode discharges was reduced when compared to L-mode plasmas in positive triangularity at lower injected power and to multi-machine L-mode scaling. 2D transport modeling with the SOLPS-ITER code is underway to estimate the change in edge transport coefficients between negative triangularity L and H-mode discharges and their effect on divertor plasma.

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