Abstract Submitted
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Measurements of Heat-flux Footprints at the Inner Divertor Target of Alcator C-Mod[1] J.L. TERRY, D. BRUNNER, B. LABOMBARD, MIT-PSFC — IR thermography has been used to measure the footprints of heat-flux onto the inner high-field side divertor target in C-Mod in a variety of discharge conditions. These include different magnetic-configurations (LSN, near-DN, and USN, with particular attention to near-DN configurations) and different confinement modes (I-mode, EDA H-mode, and ELM-free H-mode). Heat-fluxes and heat-flux widths during I-mode are especially of interest because of the enhanced power to the inner target that occurs in the "reversed" toroidal field condition that is favorable for I-mode. We find that under LSN conditions the footprints can be described by an "Eich-fit" function, with a characteristic length for heat-flux spreading into the SOL (λ_q) and a characteristic width for heat-flux spreading along the divertor leg. We find that the minimum values of λ_q in I-mode are consistent with the multi-machine observations that the H-mode λ_q on the outer target scales inversely with B_{pol}, with λ_q between 1 and 2 mm over the $0.6 < B_{pol} < 1.0$T range. However, we also measure widths that are significantly larger, both within a single discharge and between discharges that are nominally similar. We will continue to search for "hidden" variables that might lead to the scatter of the widths above the observed minimum.

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J.L. Terry
MIT-PSFC

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