Abstract Submitted
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Plasma sheath heat flux transmission in the Alcator C-Mod divertor[1] D. BRUNNER, B. LABOMBARD, J. PAYNE, MIT PSFC — A new array of embedded sensors has been installed in the Alcator C-Mod divertors to measure plasma heat flux deposition profiles. These include tile thermocouples, calorimeters [2] and a unique set of surface temperature thermocouple probes [3]. The latter sensors have the ability to measure the surface temperature evolution with $\sim$ 10 ms time response during a plasma discharge. From a simple 1-D heat transport model, surface heat fluxes can be computed as a function of time. In addition, embedded Langmuir probes simultaneously record poloidal profiles of plasma density and electron temperature at the divertor surface. Taken together, these data allow sheath heat-flux transmission factors to be inferred – a fundamental quantity of plasma-sheath physics. This paper will report initial observations and estimates of heat flux and heat deposition profiles on C-Mod's outer divertor and the implied plasma-sheath transmission factors. [2] J. Payne, *et al.*, this meeting. [3] S. Gangadhara, *et al.*, Bull. Am. Phys. Soc. **41** (1996), 1550.

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