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**Temporal Response of Profiles to a Modulated Heat Source**<sup>1</sup> J.C. DEBOO, D.P. SCHISSEL, H.E. ST. JOHN, R.E. WALTZ, K.H. BURRELL, T.C. LUCE, C.C. PETTY, P.A. POLITZER, General Atomics, J.E. KINSEY, Oak Ridge Associated Universities, E. FREDRICKSON, Princeton Plasma Physics Laboratory, M. KISSICK, University of Wisconsin — As a means of differentiating between various theory based transport models, modulated ECH experiments are planned on DIII-D. One clear difference in predictions of time dependent transport simulations using these models is the temporal response to a modulated heat source. The phase relative to the modulation source of temperature profiles near the plasma core can be dramatically different for ion temperature gradient based models compared to current diffusive ballooning mode models for instance. Phase differences varying from near zero to 180° are indicated for 1 MW modulated ECH applied near the plasma half radius. Hence we expect to be able to experimentally demonstrate a clear preference among several transport models. Details of the experimental profiles will be presented along with comparison to models. The sensitivity of model predictions to boundary conditions such as edge temperatures will also be discussed.

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