

**Abstract Submitted for the Forty-Sixth Annual Meeting  
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Category Number and Subject: 5.6.2 DIII-D Tokamak

Theory     Experiment

**Comparison Between Experiments and Thermal Simulations of the ECH Launcher Mirrors in DIII-D,\***

K. Kajiwara, *ORISE*, C.B. Baxi, J. Lohr, I.A. Gorelov, M.T. Green, D. Ponce, R.W. Callis, *General Atomics*, R.A. Ellis, *PPPL* – The ECH launchers in the DIII-D tokamak have poloidal and toroidal scan capability with steering provided using movable mirrors. Minimizing eddy current-induced forces on the mirrors while maintaining low loss rf performance presents conflicting design requirements. To solve this problem, a mirror design using a sandwich structure of Glidcop and stainless steel was developed. The reflecting surface on this mirror is a thin copper layer supported by the brazed structure. In the DIII-D launcher installations, the mirrors are cooled primarily by radiation, which creates the possibility of thermal ratcheting requiring diagnostic temperature measurements. The front surface mirror temperature can be inferred from a measurement of the back surface in conjunction with an appropriate thermal model. A comparison of experimental measurements of the back surface temperature and 3-D simulations along with implementation as an interlock will be presented.

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