

Abstract Submitted
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Sorting Category: 6.2.2 (Experimental)

**Offline Methods for Calibration of the Motional
Stark Effect Diagnostic¹**

M.A. MAKOWSKI, S.L. ALLEN, J. JAYAKUMAR, W.M. MEYER, Lawrence Livermore National Laboratory, J.R. FERRON, T.C. LUCE, T.H. OSBORNE, L.L. LAO, Q. PENG, E.J. STRAIT, General Atomics, B.W. RICE, Xenogen Corp. — A variety of algorithms and methods to optimize the fitting of Motional Stark Effect data to equilibria generated by EFIT have been implemented and compared in an effort to identify and minimize sources of systematic error in the standard analysis. These methods include a novel calibration technique in which Ohmic, L-mode I_p -ramp shots are used to optimize fitting coefficients. Results based on this method consistently demonstrate lower χ^2_{MSE} throughout a shot when compared to analysis carried out using coefficients generated by the previous method. Sensitivity studies have also been carried out to determine the local and global accuracy of the reconstructed equilibria. These reveal that there is about twice the uncertainty in the inferred value of q for $\rho < 0.15$ than for $\rho > 0.15$.

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Prefer Oral Session
Prefer Poster Session

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Special instructions: 2nd poster in Diagnostics Session (after Snider, before Wong KL)
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