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Sensitivity of EFITS to the Form of the MSE Fitting Function[1] M.A. MAKOWSKI, S.L. ALLEN, R.F. ELLIS, R. GEER, R.J. JAYAKUMAR, J.M. MOLLER, Lawrence Livermore National Laboratory, B.W. RICE, Xenogen Corporation — In order to convert raw MSE data into a field line pitch angle a transform function is used. The form of the function, and in particular, the value of the coefficients, have an influence on the inferred value of pitch angle, resulting in differences in the range of 0.5°-1.0°, well above the desired precision of 0.1°. When propagated through EFIT to generate equilibria, these differences result in variations in the inferred q- and j-profiles, as well as large differences in the predicted E_r-profile. These differences can also cause systematic errors in the same profiles. The variations are more than sufficient to alter the predicted stability properties of an equilibrium. Justifications for alternate forms of the transform (fitting) function will be outlined and the effects they have on MSE constrained EFITs will be presented.

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☐ Prefer Oral Session
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Special instructions: Poster 20, Stability, MHD, Current Drive, Advanced Tokamak

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