

Abstract Submitted
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System Design of the MSE Diagnostic for ITER¹ M.A. MAKOWSKI, S.L. ALLEN, M. GU, C.T. HOLCOMB, S. LERNER, K. MORRIS, N. WONG, Lawrence Livermore National Laboratory, R. CHIPMAN, University of Arizona — System designs for both the core and edge motional Stark effect (MSE) diagnostics for ITER have been developed and continue to be refined. An integrated system model has been developed that includes the emission physics and full optical properties of the four mirror relay system. Emphasis has been placed on minimizing the polarization aberrations of the optical relay system. A mechanical design has also been developed that can be coupled to a neutronics code for rapid evaluation of the shielding efficacy as alternative designs are examined. As part of the design program, candidate mirror materials are being characterized and then incorporated into the optics model to evaluate their impact on system performance. An overview of the system will be presented, together with various aspects of the emission model and optical and mechanical designs.

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