

Abstract Submitted
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Development of a limiter imaging system at the Helically Symmetric Experiment¹ C. BUELO, L. STEPHEY, A. BADER, F.S.B. ANDERSON, D. EISERT, D.T. ANDERSON, University of Wisconsin-Madison — A visible camera diagnostic has been developed to study the HSX limiter plasma interaction. A straight line view from the camera location to the limiter was not possible due to the complex 3D stellarator geometry of HSX, so a mirror/lens system was inserted into the plasma edge. A custom support structure for this optical system tailored to the HSX geometry was designed and installed which allows the system to be inserted and retracted as needed. The camera system has been absolutely calibrated and using H_α and C-III filters, can provide hydrogen and carbon photon fluxes, which through an S/XB coefficient, can be converted into particle fluxes. The resulting measurements have been used to obtain the characteristic penetration length of these species and will in the future be compared to magnetic field line following calculations and plasma edge simulations using EMC3-EIRENE to better understand the physics in the HSX edge.

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