

Abstract Submitted  
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**Using field line following to investigate magnetic island effects on connection length for HSX**<sup>1</sup> L.D. HURD, C.C. HEGNA, C. CLARK, D.T. ANDERSON, J.N. TALMADGE, University of Wisconsin — The divertor configurations in stellarators currently being explored are based on the inherent edge magnetic structures accessible in each particular device. In general, a larger connection length will lead to an enhancement of the perpendicular-to-parallel particle and energy transport in the scrape-off layer. Field line following is used to analyze the effects of varying the magnetic field configurations on connection lengths and strike points for HSX. In particular, the role of  $n/m = 8/7$  and  $4/4$  magnetic island structures in the edge regions of configurations available to HSX are investigated. Implications for divertor-related studies on HSX will be discussed.

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