Using field line following to investigate magnetic island effects on connection length for HSX\(^1\) 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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