Abstract Submitted
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Studies of Lower Hybrid Range of Frequencies Actuators in the ARC Device[1] P. T. BONOLI, Y. LIN, S. SHIRAIWA, G. M. WALLACE, J. C. WRIGHT, S. J. WUKITCH, MIT - PSFC — High field side (HFS) placement of lower hybrid range of frequencies (LHRF) actuators is attractive from both the standpoint of a more quiescent scrape off layer (SOL) and from the improved LH wave accessibility and penetration to higher electron temperature that results from the higher magnetic field on the HFS [1]. The resulting profiles of LH current drive (LHCD) are also more suitable for advanced tokamak (AT) operation where it is most desirable to provide a significant (˜20-30%) contribution to the total current density with a broad profile extending from r/a ˜0.5-0.85. Here we re-assess HFS LHCD in the ARC device [2] using a hierarchy of LHCD models that include a combined adjoint plus ray tracing calculation, a ray tracing plus 3D Fokker Planck calculation, and a full-wave plus Fokker Planck simulation. [1] B. LaBombard et al, Nucl. Fusion 55, 053020 (2015). [2] B. Sorbom et al, Fus. Eng. Design 100, 378 (2015).

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