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Optimization of an electron beam exciter via plasma fluid model simulation[1] DAVID URRABAZO, STEPHAN THAMBAN, University of Texas at Dallas, JIMMY HOSCH, Verity Instruments, MATTHEW GOECKNER, University of Texas at Dallas — There are numerous computational models that can be used to study plasmas, each with advantages and disadvantages. Two of the most commonly used are the ambipolar model and the classical fluid model. The ambipolar model takes advantage of the ambipolar approximation, while the classical model includes the solving of the Poisson's equation. Both models were used to simulate the operation of the ICP electron source of the Electron Beam Exciter. Process conditions and geometrical variations were performed to optimize the electron density and electron to ion ratio in the beam extraction region. Results of this optimization along with deviations between the two models will be presented.

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