

Abstract Submitted
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ArbiTER studies of scrape-off layer instability in double-null geometry D. A. BAVER, J. R. MYRA, Lodestar Research Corporation (United States), FULVIO MILITELLO, DAVID MOULTON, CCFE, Culham Science Center, Abingdon UK — The ArbiTER¹ code has been used in the past to study a wide variety of plasma instabilities. In particular, the use of perturbed density profiles is used to study filamentary structures (i.e. blobs and ELM's) by creating an environment in which linear instabilities mirror the properties of nonlinear blob-filaments. It is also used to study divertor-leg instabilities. However, the transition from single-null to double-null geometry creates a number of numerical issues related to the use of field-line following coordinates, such as integrated magnetic shear. Solutions have been developed to these problems, and the radial resolution required to overcome these issues can be quantified. By applying these techniques to profiles based on SOLPS simulations of the MAST-U experiment, the efficacy of these solutions will be tested, and insights into the properties of scrape-off layer instabilities in this geometry discussed. 1. D. A. Baver, J. R. Myra and M. V. Umansky, *Comm. Comp. Phys.* **20**, 136 (2016). Work supported by the U.S. Department of Energy Office of Science, Office of Fusion Energy Sciences, under Award Number DE-SC0019270.

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