

Abstract Submitted
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Analysis of C-2W Electrode Arcing Experimental Data JAMES SWEENEY, ERIK GRANSTEDT, PETER YUSHMANOV, MANJIT KAUR, DANIEL SHEFTMAN, DEEPAK GUPTA, THE TAE TEAM, TAE Technology, Inc. — The TAE Technologies C-2W experimental device (also called "Norman") produces advanced beam-driven field reversed configuration (FRC) plasmas [1]. Norman includes electrode biasing for heating and improved plasma stability. Extending the operational boundaries of the electrodes enhances plasma performance, but arc discharges can occur on the electrodes under extreme conditions. Arcing can have detrimental consequences, which require the phenomenon to be understood operationally. An analysis tool was developed to detect and categorize electrode arcs through image processing of high-speed camera data. The information about the electrode arcing state is combined with measurements from other diagnostics to enable statistical analysis of arcing. Correlations of plasma and experimental parameters and their relationship to electrode arcing are presented. [1] H. Gota et al., Nucl. Fusion 59, 112009 (2019)

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