

Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

Rigid Motion of C-2W FRC Plasma KAN ZHAI, MANJIT KAUR, ELI PARKE, JOHN KINLEY, ROGER SMITH, MICHAEL BEALL, CHUANBAO DENG, AND THE TAE TEAM, TAE Technology, Inc. — C-2W is an advanced beam-driven Field Reversed Configuration (FRC) fusion device, in which plasma sustainment with total temperature at 3keV has been demonstrated [1]. The DC output channels of the C-2W Thomson scattering (TS) polychromators, which are designed for system spectral response calibration and to monitor background plasma radiation for measurement uncertainty analysis, can be used to characterize the plasma motion. Due to the nature of an imaging system designed for TS collection optics, the background radiation recorded in the DC channels of the sixteen polychromators are mainly from the sixteen fixed spatial locations where the TS measurement is designed at. The time evolution of the signals from different polychromators form a unique pattern determined by FRC rigid plasma motion. Detailed analysis and its comparison with other diagnostics such as the FIR interferometer will be presented. [1] H. Gota et al., Nucl. Fusion **59**, 112009 (2019)

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Date submitted: 08 Jul 2020

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