

Abstract Submitted
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Measurement and Analysis of Plasma Radiation from a 20-channel Bolometer Array to Investigate Energy Loss from Impurity Radiation¹ HEIDI WHEELWRIGHT, Utah State University, MARK KOSTORA, THOMAS INTRATOR, Los Alamos National Laboratory — Fusion is one possible alternative for a long-term energy supply. A field reversed configuration (FRC) plasma has several desirable properties in fusion research, because it is robust, it can be compressed without changing the structure of the plasma, and it has simple geometric and magnetic properties. The use of rotating magnetic fields (RMF) to build and sustain the magnetic flux of FRC plasmas with the translation, confinement, and sustainment (TCS) FRC experiment is being investigated at the University of Washington. A bolometer array diagnostic has been designed and built to measure the total power radiated per unit length in this experiment. This project included building, testing, and calibrating the bolometer array diagnostic. The 20-channels on the bolometer array will improve the resolution of the radial profile of the radiation. This will provide information on energy loss due to impurity radiation and enable a power balance estimate for the TCS experiment.

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