

Abstract Submitted
for the DPP00 Meeting of
The American Physical Society

Sorting Category: 6.2.2 (Experimental)

Design of a 2-D X-Ray Imaging System for ECCD/ECH Experiments on DIII-D¹ K.-L. WONG, S. VON GOELER, R. FEDER, L.C. JOHNSON, PPPL, R.T. SNIDER, General Atomics, V. TRUKHIN, Kurchatov — During electron cyclotron current drive experiments, the electron cyclotron waves produce an asymmetric electron distribution function which causes an asymmetric plasma resistivity and generates a wave-driven current. Due to the asymmetric bremsstrahlung radiation pattern of energetic electrons, it also produces an asymmetric x-ray emissivity which reflects the energetic electron distribution function. A 2-D x-ray imaging system is designed to measure x-ray emission from the plasma for the study of the energetic electron distribution function during ECCD experiments on DIII-D. The design is based on a high resolution commercial image intensifying tube. This instrument allows detailed studies of ECCD physics at the fundamental level. It also can be used to study electron transport using the energetic electrons as test particles. The design parameters will be chosen based on measurements from a single channel x-ray pulse height spectrometer with a view through the plasma core. A detailed design compatible with the DIII-D environment will be presented.

¹Supported by US DOE Contracts DE-AC02-76CH03075 and DE-AC03-99ER54463.

- Prefer Oral Session
 Prefer Poster Session

K.-L. Wong
wongk@fusion.gat.com
Princeton Plasma Physics Laboratory

Special instructions: 3rd poster in Diagnostics Session (after Makowski, before Watson)

Date submitted: July 12, 2000

Electronic form version 1.4