Final

TECHNICAL REPORT

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"Experimental Studies of Plasma Fluctuations using Electron Cyclotron
Fluctuations on the Texas Experimental Tokamak"

REPORT PERIOD

May 1, 1995 – Oct. 31, 1996

Submitted by

Dr. Rex Gandy, Principal Investigator
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Electron cyclotron emission can be used as a measure of electron temperature. If the fluctuations in the cyclotron emission can be measured, then the electron temperature fluctuations can be measured. This measurement is important because electron temperature fluctuations may play an important role in anomalous transport in tokamaks. The purpose of this research grant is to measure electron temperature fluctuations and thereby help to understand anomalous transport.

During this period of the grant significant progress was made in the understanding of electron temperature fluctuations. The best measure of this progress is the resulting publications and book chapters (see following list). These publications report for the first time, a significant poloidal asymmetry in the electron temperature fluctuations. This asymmetry pointed to the possibility that trapped electron modes may play an important role in the genesis of the fluctuations.

During this period Dr. Rex Gandy was the principal investigator, and Dr. Christopher Watts was employed as a post-doctoral associate. Dr. G. Cima of the University of Texas also worked very closely on this project.

PUBLICATIONS


BOOK CHAPTERS