Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Development of a 1 mm Collective Scattering System for NSTX[1]

L. LIN, C.W. DOMIER, M. JOHNSON, N.C. LUHMANN, JR., UC Davis, R.E. FEDER, E. MAZZUCATO, H. PARK, D.R. SMITH, PPPL — A millimeter-wave collective scattering system has been developed to investigate high-k density fluctuations in the core of NSTX plasmas. The key physics issues to be addressed lie in the detection of ETG turbulence and the study of electron thermal transport. Operating at 280 GHz (1.1 mm), the five channel receiver samples radial density fluctuations with wavenumbers k_r <20 cm^{-1}. System details regarding the source and superheterodyne receiver electronics, and active and passive laboratory measurement data taken prior to installation on NSTX, will be presented.

[1]Supported by U.S. DoE Grants DE-FG02-99ER54518 and DE-AC02-76-CHO-307.

Calvin Domier
UC Davis

Date submitted: 26 Jul 2005 Electronic form version 1.4