Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Core Density Turbulence in the HSX Stellarator[1] C.B. DENG, D.L. BROWER, University of California, Los Angeles, D.T. ANDERSON, F.S.B. ANDERSON, B. FABER, S.T.A. KUMAR, K.M. LIKIN, J.N. TALMADGE, University of Wisconsin-Madison — Density fluctuations are measured in the core of the HSX stellarator using a non-perturbing, multi-channel, interferometer system. Measurements show that broadband density turbulences with $k_\perp < 2$ cm^{-1}, f= (20-200) kHz correlates with density gradient and plasma flow. The density fluctuation level is observed to decrease with increasing ECRH power as both the electron temperature, and its gradient, along with plasma flow increase. Electron temperature gradient is eliminated as drive for the observed turbulence. GENE simulations show that the density-gradient-driven TEM may be responsible for the observed density fluctuations. Low-frequency coherent modes are also observed in different magnetic configurations, mirror and QHS. The identifications of these coherent modes will be explored.

[1]Supported by USDOE grants DE-FG03-01ER54615 and DE-FG02-93ER54222.

Chuanbao Deng
University of California, Los Angeles

Date submitted: 11 Jul 2014 Electronic form version 1.4