Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Designing and testing a high power rf matching network circuit for helicon plasma antennas KYLE ADRIANY, RYAN DE LEON, SAIKAT CHAKRABORTY THAKUR, GEORGE TYNAN, Univ of California - San Diego — Controlled Shear Decorrelation eXperiment [CSDX] is a helicon plasma device dedicated to basic plasma studies of turbulence and transport in a very controlled and well diagnosed plasma environment. Previous studies in argon helicon plasmas were performed at relatively low power thresholds, typically 1.5 kWatts (maximum of 1.8 kWatts), mainly because of arcing in the rf matching circuit at higher powers. We are designing a completely new rf matching network circuit with new higher power rated capacitors and better insulation to prevent arcing even at much higher powers. We shall report initial results of using this new matching network circuit to couple rf power, up to 5 kwatts, to the helicon antenna in CSDX. We believe that this capability shall significantly improve upon the range of plasma parameters previously studied at CSDX.

Kyle Adriany
Univ of California - San Diego

Date submitted: 11 Jul 2014 Electronic form version 1.4