

Controlled Shear De-correlation eXperiment [CSDX] is a linear plasma device dedicated to the studies of drift wave turbulence-zonal flow (DWT-ZF) interaction and the generation of intrinsic rotation in a simple plasma configuration. The 2.8 m long machine, operated with a 13.56 MHz, 1500 Watt RF helicon wave source, is immersed in a solenoidal magnetic field that can varied up to 1 kG. Typical DWT-ZF experiments were performed in a configuration where all the magnetic field lines exiting the two ends of the device terminate on insulating surfaces to eliminate the possibility of currents flowing through the end plates of the device. For drift wave fluctuations, charge conservation couples the parallel and perpendicular currents in the plasma. Using conducting end plates will change the effective parallel fluctuating current and in the process affect the radial current and the associated azimuthal force balance. To study the effect of parallel currents flowing through the end plates, the present experimental set up is such that the magnetic field lines end in conductors. The insulating ends have been removed and replaced by a metallic mesh so that a fast framing camera can also be used along with multi-tip Langmuir probe measurements. Preliminary results from the conducting boundary condition experiments show the absence of drift wave turbulence and the subsequent absence of zonal flows. A series of controlled experiments are planned to compare the effects of the insulating and the conducting boundary conditions on the plasma behavior and initial results will be shown.