Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Preliminary results from a novel ECE imaging system under various RF heating schemes on EAST[1] CHEN LUO, BINGXI GAO, YILUN ZHU, JINLIN XIE, TAO LAN, ADI LIU, HONG LI, WANDONG LIU, CHANGXUAN YU, USTC, BENJAMIN TOBIAS, PPPL, CALVIN DOMIER, NEVILLE LUHMANN, U.C. Davis, TONY DONNE, DIFFER, ECE TEAM, LIQUN HU, ASIPP, U.C. DAVIS COLLABORATION, PPPL COLLABORATION, ASIPP COLLABORATION, DIFFER COLLABORATION — A novel 384 channel electron cyclotron emission imaging system is installed on EAST with wide-band electronics that enables a continuous radial coverage up to 30 cm and a flexible vertical coverage up to 80 cm controlled by zoom optics. Recent investigations of the plasma current ramp-up and plateau phases reveal various kinds of MHD activities. Detailed 2D ECE images in those phases have revealed different mechanisms around sawtooth crashes. 2D ECE imaging under various auxiliary heating schemes has revealed a superposition of various MHD modes with different harmonics, and the response of these modes to RF power modulation has been studied. Furthermore, low frequency up-chirping modes during LHCD have been observed. Finally, the application of several novel analysis techniques for 2D microwave imaging data is discussed.

[1]Supported by ITER Domestic Program of China (No. 2009GB107001), NNSFC (No. 10990210, 10905057) and KIPCAS (No. kjcx-yw-n28).

Chen Luo
USTC

Date submitted: 13 Jul 2012 Electronic form version 1.4