

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

KSTAR ECE Imaging for Temperature and Edge Density Measurements¹ G.S. YUN, W. LEE, M.J. CHOI, J.B. KIM, H.K. PARK, Postech, C.W. DOMIER, B. TOBIAS, T. LIANG, X. KONG, N.C. LUHMANN, JR., Univ. of California at Davis, A.J.H. DONNE, FOM Institute of Plasma Physics, T. MUNSAT, Univ. of Colorado at Boulder — ECE imaging (ECEI) system is becoming a powerful diagnostic for studying MHD instabilities in tokamaks. A prominent example is the 2D visualization of sawtooth reconnection physics in the TEXTOR, which revealed the high field side crash and collective heat transport [Park, et al., PRL 96, 195003 (2006)] forbidden in the Ballooning mode model. An improved ECEI system with considerably wider spatial coverage (spanning both high and low field sides) and $\sim \mu\text{sec}$ time resolution has been installed on the KSTAR. The first KSTAR ECEI images showing the 2D spatial structures of the MHD dynamics of inner/outer regions (e.g. NTMs and ELMs) and Alfvén eigenmodes/waves will be presented. The feasibility of using ECEI data from the optically thin edge region to recover 2D electron density changes during L/H mode transitions is also discussed.

¹Work supported by NRF Korea contract no. 20090082507, U.S. DoE contract no. DE-FG02-99ER54531, and the association Euratom-FOM. J. B. Kim is also partially supported by WCI Center for Fusion Theory at NFRI, Korea.

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POSTECH

Date submitted: 22 Jul 2010

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