Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Experimental investigation of LHCD's effect on plasma rotation on EAST BO LYU, Chinese Academy of Sciences, XIANGHUI YIN, University of Science and Technology of China, YINGYING LI, BOJIANG DING, MIAOHUI LI, HAIQING LIU, Chinese Academy of Sciences, JUN CHEN, RUIJI HU, University of Science and Technology of China, FUDI WANG, QING ZANG, MAO WANG, FUKUN LIU, JIA FU, Chinese Academy of Sciences, YUEJIANG SHI, University of Science and Technology of China, BAONIAN WAN, Chinese Academy of Sciences, EAST TEAM — LHCD's effect on plasma rotation was reported. It was found that ˜20km/s co-current rotation change was driven, which was linearly correlated with changes in li and q_0 and evolves over current diffusion time. Hysteresis between rotation and Te was observed, suggesting different transport between heat and momentum transport. Rotation profile shows that the change arises from the region where LHCD was deposited and then transported to the core, confirming the rotation drive was originated at the plasma edge. For NBI heated plasma, counter-rotation change was observed upon the injection of the LHCD and continued to co-rotation change shortly. Further experiments showed that the change of rotation induced by LHCD decreases with plasma current (Ip), plasma density and increase with LHCD power. A comparison between the rotation driven by 4.6G LHCD and 2.45G LHCD on EAST is also presented, in which higher frequency LHCD could induce more rotation change, due to the better heating and CD efficiency with 4.6GHz LHW.

Bo Lyu
Chinese Academy of Sciences

Date submitted: 13 Jul 2017 Electronic form version 1.4