Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

The Preliminary Experimental Results of Resonant Magnetic Perturbation Coils on J-TEXT Tokamak[1] BO RAO, YONGHUA DING, WEI JIN, QIMING HU, NENGCHAO WANG, BIN YI, QUANLIN LI, WUBING ZENG, GE ZHUANG, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology) — A set of saddle coils system designed for generating rotating resonant magnetic perturbations (RMPs) has been installed inside the vacuum vessel of the J-TEXT tokamak and recently operated in DC mode and produced mainly m/n=2/1 mode perturbations. This system named as DRMP consists of 12 coils divided into 4 groups which equivalently locate in the toroidal direction. Another set of saddle coils system (now given a new name as SRMP) originally designed for TEXT-U has also been reconstructed outside the J-TEXT vessel wall. The SRMP mainly generates 2/1, 3/1 and some other higher m modes perturbations. In a J-TEXT Ohmic discharge, when the visible tearing modes with a high frequency ($>$ 6 kHz, typically), the SRMP applied on a suitable spatial phase can suppress the modes completely, but if the SRMP operates at the opposite spatial phase, a locked mode would be stimulated afterward even though the modes have been suppressed. Nevertheless, if the mode frequency is too low, RMP will directly lead to mode locking. With some discharges without any visible tearing modes, mode penetration by DRMP is observed. The experimental results and their possible explanations will be given in the meeting.

[1]National ITER Project Funds of China (2010GB107004) and National Science Funds of China (50907029)

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Date submitted: 11 Jul 2012 Electronic form version 1.4