Abstract Submitted
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Survey of Electron Heat Diffusion Driven by Sawtooth Crashes in J-TEXT Tokamak[1] JIAN CHAO LI, XIAO QING ZHANG, BO RAO, YONG HUA DING, GE ZHUANG, State Key Laboratory of Advanced Electromagnetic Engineering and Technology — A soft X-ray diagnostic system has been established on the J-TEXT tokamak aiming to observe and survey the MHD activities, in particular, sawtooth behavior. The system consists of 8 cameras stretching to 128 collimated viewing chords which can cover the cross section of the tokamak. Investigation and analysis of the propagation of heat-pulses due to sawtooth crashes can provide the possibility to evaluate the electron heat diffusivity χ_{ep}. The value deduced by heat pulse measurements on J-TEXT tokamak is about 7$\sim$18 m^2/s, 4 $\sim$ 9 times of χ_e ($\approx$2 m^2/s) which is predicted by power balance calculations. By applying externally resonant magnetic perturbations (RMPs), it is found that χ_{ep} is lower than that value without RMPs. More experimental results and the analysis will be presented in the meeting.

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