Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

**Modeling of Resistive Wall Modes in Tokamak and Reversed Field Pinch Configurations of KTX**[1] RUI HAN, Univ of Sci Tech of China, PING ZHU, Univ of Sci Tech of China, University of Wisconsin-Madison, WEI BAI, TAO LAN, WANDONG LIU, Univ of Sci Tech of China — Resistive wall mode is believed to be one of the leading causes for macroscopic degradation of plasma confinement in tokamaks and reversed field pinches (RFP). In this study, we evaluate the linear RWM instability of Keda Torus eXperiment (KTX) in both tokamak and RFP configurations. For the tokamak configuration, the extended MHD code NIMROD is employed for calculating the dependence of the RWM growth rate on the position and conductivity of the vacuum wall for a model tokamak equilibrium of KTX in the large aspect-ratio approximation. For the RFP configuration, the standard formulation of dispersion relation for RWM based on the MHD energy principle has been evaluated for a cylindrical $\alpha$-$\Theta$ model of KTX plasma equilibrium, in an effort to investigate the effects of thin wall on the RWM in KTX. Full MHD calculations of RWM in the RFP configuration of KTX using the NIMROD code are also being developed.

[1]Supported by National Magnetic Confinement Fusion Science Program of China grant Nos. 2014GB124002, 2015GB101004, 2011GB106000, and 2011GB106003.

Rui Han
Univ of Sci
Tech of China

Date submitted: 12 Jul 2016 Electronic form version 1.4