

Abstract Submitted  
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**A Novel Kinetic Electron Model for Tearing Mode in Magnetic Confined Plasmas** DONGJIAN LIU, Sichuan University, JIAN BAO, ZHIHONG LIN, University of California, Irvine,, TAO HAN, Sichuan University, GTC TEAM, GTC TEAM — Compared with the fluid simulation, kinetic simulation of the collisionless tearing mode has been performed via a novel kinetic electron model. Based on the Gyrokinetic Toroidal Code simulation, the new electron model can not only recover the linear behavior of collisionless tearing mode, but also show great computational advantages in the kinetic simulation of long wavelength magnetohydrodynamic (MHD) and short wavelength drift-Alfvénic instabilities.

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