

Toroidal Alfvén Eigenmode Driven by Runaway Electrons During Minor Disruptions in the SUNIST Ohmic Plasmas

Z. Gao¹, Y. Q. Liu¹, Y. Tan¹ and the SUNIST Team^{1,2}

¹*Department of Engineering Physics, Tsinghua University, Beijing 100084, PR China*

²*Institute of Physics, Chinese Academy of Sciences, Beijing 100083, PR China*

Lead-author e-mail: gaozhe@tsinghua.edu.cn

The toroidal Alfvén eigenmode (TAE) excited by runaway electrons during minor disruptions was identified in the SUNIST Ohmic plasmas. The TAE mode was observed in the frequency range 150-400kHz, with the $m/n=-3/-1$ and $-4/-1$ harmonics, and propagating in the electron diamagnetic direction in the laboratory frame of reference. This mode appeared only when a runaway plateau was built in the post-disruption plasma, which is quite different to the MHD behavior during the internal reconnection events (IREs). The resonant interaction of runaway electrons with the precession drift frequency was considered to drive the TAE. The potential application of mitigating runaway electrons by exciting the TAE is discussed as well.

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