

Abstract Submitted  
for the DPP14 Meeting of  
The American Physical Society

**Separation of Evans and Hiro currents in VDE of tokamak plasma**<sup>1</sup> SERGEI A. GALKIN, V.A. SVIDZINSKI, FAR-TECH Inc., L.E. ZAKHAROV, PPPL — Progress on the Disruption Simulation Code (DSC-3D) development and benchmarking will be presented. The DSC-3D is one-fluid nonlinear time-dependent MHD code, which utilizes fully 3D toroidal geometry for the first wall, pure vacuum and plasma itself, with adaptation to the moving plasma boundary and accurate resolution of the plasma surface current. Suppression of fast magnetosonic scale by the plasma inertia neglecting will be demonstrated. Due to code adaptive nature, self-consistent plasma surface current modeling during non-linear dynamics of the Vertical Displacement Event (VDE) is accurately provided. Separation of the plasma surface current on Evans and Hiro<sup>2,3</sup> currents during simulation of fully developed VDE, then the plasma touches in-vessel tiles, will be discussed.

<sup>1</sup>Work is supported by the US DOE SBIR grant # DE-SC0004487.

<sup>2</sup>L.E. Zakharov, Phys. Plasmas, 15, 062507 (2008)

<sup>3</sup>L.E. Zakharov, S.A. Galkin, S.N. Gerasimov, Phys. Plasmas 19, 055703 (2012)

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Date submitted: 10 Jul 2014

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