

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Leonid E. Zakharov**

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报告题目:

**Implementation of TMHD into the
Vertical Disruption simulation code
(VDE) (part 2)**

邀请人: 郑伟英 研究员

报告时间: 2014 年 12 月 16 日 (周二)

上午 10:00-11:00

报告地点: 数学院南楼五层 514

会议室

Abstract:

The numerical scheme of TMHD was recently implemented into a numerical code VDE for simulation of the so called vertical instability of the plasma.

This instability represents the simplest, 2-dimensional case, of macroscopic instabilities of tokamak plasma. At the same time, this phenomenon contains almost all major effects disruptions with 3-dimensional plasma deformation.

5 regimes of vertical instability are reproduced (and discovered) by the VDE code.

In particular, our numerical simulations gave explanation to the electric currents from the plasma to the wall, and have challenged the 24 years long misinterpretation of experimental measurements of them as the so-called ``halo'' currents.

The simulations motivated the design and installation of a new diagnostics in the upgraded tokamak in PPPL NSTX-U.

欢迎大家参加！