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China

# Weikang Tang

## Ph. D. in Plasma Physics

### About me

#### My interests

Massive parallel gyrokinetic PIC simulation in tokamak plasmas, simulation of macroscopic instabilities in tokamak based on MHD theory. At first, I study the NTM instability and its control by ECCD and RMP. Now, I change my field of concentration to the Gyrokinetics, mainly the implementation of sonic level toroidal flow and effects of toroidal flow on drift wave instabilities.

#### My motto

*My life is a war against those evil forces who want to uniform my inhomogeneity.*

#### My page

[www.github.com/victowne](http://www.github.com/victowne)

### Education

#### Present, Dalian University of Technology

Ph. D. Candidate in Plasma Physics

#### 2015, Dalian University of Technology

B.S. in Applied Physics

### Software Development Skills

#### Programming skills

- Fortran
- C++
- Matlab
- OpenMP/MPI
- Python
- HDF5

#### Code development experience

I. I was supposed to be a two-year visiting student at the CIPS of CU-Boulder under the supervision of Dr. Yang Chen, after I was funded by the China Scholarship Council in 2019. However, due to the pandemic of the COVID-19, we decided to turn this program into a mode of distant supervision. My work is to add the sonic level toroidal flow in the gyrokinetic electromagnetic code, GEM, and testify its accuracy. I don't know how to describe this magic experience, so I would like to call it a e-visiting student.

II. I developed the two-fluid version of the cylindrical MHD code MDC based on a set of four field MHD equations, including the effects of electron diamagnetic drift and parallel ion flow.

III. For finite element method computing, I wrote a small tool in Python to read the Geqdsk file, generate triangle meshes based on the magnetic flux surfaces, and then convert it to HDF5 file format output.

### Awards

#### 2019, Visiting Scholar Scholarship, China Scholarship Council

Awarded to outstanding individuals to support their studies abroad.



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## Presentations

**2020, Oral, the 4<sup>th</sup> Asia-Pacific Conference on Plasma Physics, Online**  
"Control of neo-classical tearing mode by synergetic effects of RMP and ECCD in RMS tokamak plasmas"

**2019, Oral, the 11<sup>th</sup> International Conference on Computational Physics, Hangzhou**

"Control of neo-classical tearing modes by ECCD in tokamak plasmas"

**2019, Oral Invited, the 7<sup>th</sup> Conference on Magnetic Fusion Theory and Simulation, Wuhan**

"Control of neo-classical tearing mode by synergetic effects of RMP and ECCD"

## Publications

**2020, "Control of neoclassical tearing mode by synergetic effects of resonant magnetic perturbation and electron cyclotron current drive in reversed magnetic shear tokamak plasmas"**

**W. Tang, Z. X. Wang, L. Wei, J. Wang and S. Lu, *Nucl. Fusion* 60 026015**

**2019, "Effects of resonant magnetic perturbation on locked mode of neo-classical tearing mode"**

**W. Tang, L. Wei, Z. X. Wang, J. Wang, T. Liu and S. Zheng, *Plasma Sci. Technol.* 21 065103**