

JUNJUE LIAO

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EDUCATION

Shanghai Jiao Tong University (SJTU), Shanghai, China 2021 – Present

B.S in Physics (Zhiyuan Honors Program, Elite Class)

GPA: 3.7 / 4.3, Expected graduation: Jun. 2025

Research area: Plasma Physics.

RESEARCH EXPERIENCE

Laboratory of Plasma Studies, Cornell Ithaca, America

Summer Intern, Adviser: Gennay Shvets Jun. 2024 – Sep. 2024

- Built an analytic model of stable structures in ultra-intense laser interaction with underdense plasma.
- Derived a formula to describe the parameter space in which the CEP effect becomes significant.

Institute of Laser Plasma Physics, SJTU Shanghai, China

Undergraduate Researcher, Adviser: Jie Zhang Sep. 2023 – Nov. 2024

- Built an analytical model for thermonuclear burn propagation
- Derived a relaxed detonation thresholds by alpha-heating in inertial confinement fusion.

Undergraduate Researcher, Adviser: Min Chen Sep. 2023 – Nov. 2024

- Built a model to manipulate the laser spatiotemporally using the inhomogeneity of the accelerating field

Shanghai Synchrotron Radiation Facility Shanghai, China

Summer Intern Jun. 2023 – Sep. 2023

- Built a resonant cavity tuning system for Shanghai High Repetition Rate XFEL and Extreme light facility.

PUBLICATION AND PRE-PRINT (* INDICATES EQUAL CONTRIBUTION)

- [1] Bohan Shen*, Junjue Liao*, Renjie He*, Zekun Xu, Fuyuan Wu, and Jie.Zhang. Relaxed detonation thresholds by alpha-heating in inertial confinement fusion. In review at *Nuclear Fusion*
- [2] Junjue Liao, Jihoon Kim, and Gennady Shvets. Analytic model of stable shock-like structures in laser interaction with underdense plasma for identifying of phase and polarization dependent regime of laser wakefield accelerators. *arXiv e-prints*, page arXiv:2410.06532, October 2024.

HONORS AND AWARDS

Zhiyuan Honors Scholarship - Top 5% in SJTU each year. 2021-2024

Zhiyuan Oversea Research Scholarship 2024

Undergraduate- Merit Scholarship - Top 30% in Zhiyuan Honors Program each year 2021-2023

MISCELLANEOUS

- Programming Languages: Cpp, Python, Matlab, Labview, \LaTeX PIC(epoch,FBPIC,WAKE1D)
- Language: TOEFL Best Score:110, TOEFL:105, IELTS: 7.0
- Personal Website: <https://junjueliao.github.io/>
- Representative Coursework: Linear Algebra, Advanced Mathematics, Physical Optic, Calculation Programming, Condensed Matter Physics ,Plasma Physics