

Chenghao Zhang

General Information

Name: Chenghao Zhang

Gender: Male

Birthplace: Wenzhou, Zhejiang, China

Email: cz38@illinois.edu

EDUCATION

Peking University

Beijing, China

BS in Dept. of Physics, School of Physics

Sep.2015- Jul.2019

Advisor: Prof. Yuhai Tu & Prof. Qi Ouyang

- GPA 3.68/4

University of Illinois at Urbana Champaign

Urbana, IL, USA

Ph.D. in Dept. of Physics, College of Engineering

Aug. 2019 –

Advisor: Prof. Martin Gruebele

- GPA 3.92/4.00

RESEARCH EXPERIENCE

Peking University (Department of Physics)

Beijing, China

IBM Thomas J. Watson Research Center

Yorktown Heights, NY USA

Project: Investigating energy constraint of accurate spatial orientation in biosystem

- Advisor: Prof. Yuhai Tu & Prof. Qi Ouyang Aug. 2018 – Jul. 2019

University of Illinois at Urbana Champaign (Dept. of Physics) Urbana, IL, USA

Project: Large scale simulation of Quantum energy flow between molecular fragments

- Advisor: Prof. Martin Gruebele and Prof. Edwin Sibert Jul. 2020 - Jan. 2021

Project: Quantum Information scrambling and out of time ordered correlation functions (OTOCs) in molecular systems.

- Advisor: Prof. Martin Gruebele and Prof. Peter Wolynes Sept. 2020 -

Projects: Surface crossing and energy flow in many dimensional quantum systems

- Advisor: Prof. Martin Gruebele, Prof. David E. Logan and Prof. Peter Wolynes
Aug. 2022 – Jan. 2023

SELECTED AWARDS AND HONORS

- Cyrus Tang Scholarship Peking University 2015-2017
- Award for Academic Excellent Peking University 2016-2017
- Excellent Graduate Peking University 2019
- University Fellowship University of Illinois at Urbana Champaign 2021, 2022
- IBM-Zerner Graduate Student Award 61st Sanibel Symposium 2022
- Grad Travel Award University of Illinois at Urbana Champaign 2022

PUBLICATION

1. Chenghao Zhang, Edwin L. Sibert III and Martin Gruebele, “A phase diagram for energy flow limited reactivity”, J. Chem Phys. 154, 104301 (2021)
2. C. Zhang, P. G. Wolynes, and M. Gruebele, *Quantum Information Scrambling in Molecules*, Phys. Rev. A **105**, 033322 (2022).
3. C. Zhang, M. Gruebele, D. E. Logan, and P. G. Wolynes, *Surface Crossing and Energy Flow in Many-Dimensional Quantum Systems*, Proc. Natl. Acad. Sci. U.S.A. **120**, e2221690120 (2023)

TALK

- 61st Sanibel Symposium poster presentation
- APS March Meeting 2022 Oral presentation
Link: <https://meetings.aps.org/Meeting/MAR22/Session/Y01.1>
- 76th International Symposium on Molecular Spectroscopy (ISMS)
MH10: A phase diagram for energy flow limited reactivity

TL10: Quantum Information scrambling in Molecules

- Condensed Matter Journal Club, UIUC Physics
(Bounds on chaos from Eigenstate thermalization hypothesis)
- APS March Meeting 2023 Oral presentation

Link: <https://meetings.aps.org/Meeting/MAR23/Session/Y33.12>