Chenghao Zhang

General Information

Name: Chenghao Zhang Gender: Male

Birthplace: Wenzhou, Zhejiang, China Email: cz38@illinois.edu

EDUCATION

Peking University Beijing, China

B.S. Department of Physics Sep. 2015- Jul. 2019

Advisor: Prof. Yuhai Tu & Prof. Qi Ouyang

GPA 3.68/4

University of Illinois, Urbana-Champaign Urbana, IL, USA

Ph.D. Department of Physics Aug. 2019 – Jul. 2024 (Expected)

Advisor: Prof. Martin Gruebele

GPA 3.92/4.00

RESEARCH EXPERIENCE

Peking University, Department of Physics Beijing, China

Project: Investigating energy constraint of accurate spatial orientation in biosystem

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

University of Illinois, Urbana-Champaign, Department 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

AWARDS AND HONORS (Selected)

- Mavis Future Faculty Fellow University of Illinois, Urbana-Champaign 2023 - 2024
- Grad Travel Award University of Illinois, Urbana-Champaign 2022
- IBM-Zerner Graduate Student Award 61st Sanibel Symposium 2022
- University Fellowship University of Illinois, Urbana-Champaign 2021, 2022
- Excellent Graduate Peking University 2019
- Award for Academic Excellent Peking University 2016 -2017
- Cyrus Tang Scholarship Peking University 2015 - 2017

PUBLICATION

† Equal contribution

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)

4. D. Zhang†, C. Zhang†, Q. Ouyang, and Y. Tu, *Free Energy Dissipation Enhances Spatial Accuracy and Robustness of Self-Positioned Turing Pattern in Small Biochemical Systems*, Journal of The Royal Society Interface **20**, 20230276 (2023).

PRESENTATIONS

- "Quantum Information Scrambling in Molecules"
  61st Sanibel Symposium, St Simons Island, GA, February 2022 (Poster)

- "Quantum Information Scrambling in Molecules"
  APS March Meeting 2022, Chicago, IL, March 2022 (Talk)

- "A phase diagram for energy flow limited reactivity"
  75th International Symposium on Molecular Spectroscopy, Urbana, IL, Jun. 2022 (Talk)

- "Quantum Information scrambling in Molecules"
  75th International Symposium on Molecular Spectroscopy, Urbana, IL, Jun. 2022 (Talk)

- "Reaching the Bound for Quantum Information Scrambling of Reactions"
  APS March Meeting 2023, Las Vegas, Nevada, March 2023 (Talk)

- "Surface crossing and energy flow in many dimensional quantum systems"
  76th International Symposium on Molecular Spectroscopy, Urbana, IL, Jun. 2023 (Talk)