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
- Mavis Future Faculty Fellow University of Illinois at Urbana Champaign 2023-2024

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. Zhang, D†., Zhang, C.†, Ouyang, Q., & Tu, Y. (2023). Free energy dissipation enhances spatial accuracy and robustness of self-positioned Turing pattern in small biochemical systems.
Journal of The Royal Society Interface, *20* (204), 20230276. doi:10.1098/rsif.2023.0276

TALK

- 61st Sanibel Symposium poster presentation
- APS March Meeting 2022 Oral presentation
  Link: https://meetings.aps.org/Meeting/MAR22/Session/Y01.1
- 75th International Symposium on Molecular Spectroscopy (ISMS 2022)
  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
- 76th International Symposium on Molecular Spectroscopy (ISMS 2023)
  MJ01: Surface crossing and energy flow in many dimensional quantum systems