Qianlong Wang

Ph.D. Student in Condensed Physics

- May, 1994
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- Qianlong Wang
- QIanGua
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About Me ———

Ph.D. Student in Condensed Physics at Zhejiang University, I deal with open quantum system and its applications to calculate the dynamics of open quantum system, especially the spin-boson model. I am good at studying problems with programming languages, i.e., Python, Julia, Matlab and R. Passionate about innovation and scientific dissemination, I never refuse going out to discuss fresh ideas. Pursuing efficient tools and workflow is my hobby

Social Network ——

- Qianlong Wang
- Peace Wang
- QIanGua
- Qianlong Wang

Education

Study

2016.9 – 2022.6	**Ph.D. in Condensed Physics**	Zhejiang University
	Exploration and development of Hierarchical Equations of Motions applied to open quantum system, especially the spin-boson model.	
2012.6 – 2016.9	**B.S. in Physics**	Ningbo University
	Basic training in Physics where I discovered a natural inclination towards Theoretical Physics, Programming and Data Analysis.	

Experience

Research

2021 – 2022	**Graduate Researcher**	Zhejiang University
	Research focused on writing my Ph.D. thesis named as "The Study of Quantum Phase Transition in the Spin-Boson Model"	
2020 – 2022	**Graduate Researcher**	Zhejiang University
	Research focused on studying the linear absorption spectrum of spin-boson model in zero temperature. The work is summarised and will be published soon.	
2019 – 2020	**Graduate Researcher**	Zhejiang University
	Research focused on learning and applying the Data-Driven Gradient-Ascent Pulse Engineering technique to obtain high fidelity quantum gate. The work is summarised and published in the journal of Physical Review Applied.	
2017 – 2019	**Graduate Researcher**	Zhejiang University
	Research focused on applying the extended Hierarchical Equations of Motion method to study the dynamical scaling behavior in Ohmic spin-boson model. The work is summarised and published in The Journal of Chemical Physics.	
2016 – 2017	**Graduate Researcher**	Zhejiang University
	Research focused on learning the Hierarchical Equations of Motion method in Open Quantum System. The work is summarised and published in The Journal of Chemical Physics.	
2012 – 2016	**Bachelor Student**	Ningbo University
	Traineeship focused on the non-equilibrium dynamics of quantum heat engine.	

Teaching

2019 – 2020	**Teaching Assistant**	Zhejiang University
	Responsible for introductory lessons to MATLAB and answering puzzlements in thermodynamics for first year students of the B.S. in Physics of the Zhejiang University	
2018 – 2019	**Laboratory Assistant**	Zhejiang University
	Support to Physics Laboratory activities for the first year students of different directions in Zhejiang University.	

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Ph.D. Student in
Condensed Physics

Soft Skills ─────

- ⛓ Complex problem-solving
- 🚀 Analytical thinking and innovation
- 📈 Critical thinking and analysis
- 🔍 Attention to detail, trustworthiness

Technical Skills ─────

- 💻 Operating systems
  - 🍎 Mac OS
  - 🐧 Linux
  - ⊞ Windows
- >_ Programming languages
  - </> R ● ● ● ● ●
  - </> Julia ● ● ● ○ ○
  - </> Python ● ● ● ○ ○
  - </> C/C++ ● ● ● ● ○
  - </> Mathematica ● ● ● ● ○
  - </> Matlab ● ● ● ● ○
  - </> Fortran ● ● ● ○ ○
- 🧊 Machine Learning frameworks
  - 📦 PyTorch
- ⚙ Other suites
  - ⚙ Emacs & NeoVim
  - ⚙ Visual Studio Code
  - ⚙ Microsoft Office
  - ⚙ LaTeX
  - ⚙ Git
  - ⚙ Mysql
  - ⚙ Shell

Languages ─────

- 🇨🇳 Chinese ● ● ● ● ●
- 🇬🇧 English ● ● ● ○ ○

Awards

| 2020 – 2022 | **Ph.D. Graduate Academic Scholarships** |
| | Scholarship for Ph.D. in Zhejiang University |

Publications

2017	**The study of an extended hierarchy equation of motion in the spin-boson model: The cutoff function of the sub-Ohmic spectral density**
	Co-workers and Me
	The Journal of Chemical Physics
2019	**Dynamical scaling in the Ohmic spin-boson model studied by extended hierarchical equations of motion**
	Me and co-workers
	The Journal of Chemical Physics
2021	**Optimization of a Controlled-Z Gate with Data-Driven Gradient-Ascent Pulse Engineering in a Superconducting-Qubit System**
	Co-workers and Me
	Physical Review Applied
2022	**Linear Absorption Spectrum of the Spin-Boson Model Studied by Extended Hierarchical Equations of Motion**
	Me and co-workers
	(To be published)

Extra-Curricular Activities

Education	Answer various questions in Stack Overflow
Software	Master the skill of configuring common text editors
Sports	Master the skills of playing various ball games