Peng Jin

Born on February 28, 1997

Address: Fudan University, 200438 Shanghai, China

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Education

PhD student in Theoretical Physics (Advisor: Prof. Jiping Huang) **2019.09-2024.06**

Department of Physics, **Fudan University** Shanghai, China

Awards & Honors:

- National Scholarship, Ministry of Education (2023)
- Honorable Mention of the PhotonIcs and Electromagnetics Research Symposium (PIERS) (2023)
- Gold Award of poster of the Annual Academic Conference of Dept. Physics, Fudan University (2023)
- First prize of poster of the 8th Five-School-Union, Tsinghua University (2nd/50; 2021)
- KLA Scholarship, Fudan University (2021); Huawei Scholarship, Fudan University (2020)
- First prize of scholarship for outstanding doctoral candidates, Fudan University (2021)
- Outstanding students, Fudan University (2020); Excellent League Member, Fudan University (2022)

Visiting student (Advisor: Prof. Emil J. Bergholtz) **2023.10-2024.01**

Department of Physics, **Stockholm University** Stockholm, Sweden

Bachelor in Optoelectronic Information Science and Engineering **2015.09-2019.06**

School of Science, **Donghua University** Shanghai, China

Awards & Honors: (GPA: 4.18/5.00; 1st/40 2018; 1st/40 2017; 1st/50 2016)

- National Scholarship, Ministry of Education (2017 and 2018)
- Shanghai Excellent Graduates, Shanghai Municipal Commission of Education (2019)
- Student Person of the Year, Donghua University (Top 10 of all; 2018)
- Youth pacesetter of the May 4th, Donghua University (Top 10 of all; 2017)
- Third prize of the 35th National University Physics Competition, Shanghai Physical Society (2019)

Study tours **2018.07-2018.08**

Cambridge University UK

Awards & Honors:

- Tianji International Exchange Scholarship (40000 RMB), Donghua University (2018)
- Recommendation Letter, Professor in Cambridge University (2018)

Research interest

Non-Hermitian physics; Non-Abelian topology; Topological heat transport; Thermal metamaterials; Hydrodynamics; Machine Learning

Publication list

ORCID: https://orcid.org/0000-0002-4440-5240

(First author#, Corresponding author*)

1. F. Yang#, Z. Zhang#, L. Xu#, Z. Liu#, **P. Jin**#, P. Zhuang, M. Lei, J. Liu, J.-H. Jiang, X. Ouyang, F. Marchesoni, and J. P. Huang*, Controlling mass and energy diffusion with metamaterials, ***Reviews of Modern Physics*** in press, (2023). http://arxiv.org/abs/2309.04711

2. **P. Jin**#, J. Liu, L. Xu, J. Wang, X. Ouyang, J.-H. Jiang*, and J. P. Huang*, Tunable liquid-solid hybrid thermal metamaterials with a topology transition, ***Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 120**, e2217068120 (2023).

3. **P. Jin**#, L. Xu, G. Xu, J. Li, C.-W. Qiu*, and J. P. Huang*, Deep learning-assisted active metamaterials with heat-enhanced thermal transport, ***Advanced Materials*** 2305791 (2023). https://doi.org/10.1002/adma.202305791

4. **P. Jin**#, J. Liu#, F. Yang, F. Marchesoni, J.-H. Jiang, and J. P. Huang*, *In-situ* simulation of thermal reality, ***Research* 6**, 0222 (2023). [IF=11.0]

5. **P. Jin**#,*, S. Yang, L. Xu, G. Dai, J. P. Huang*, and X. Ouyang*, Particle swarm optimization for realizing bilayer thermal sensors with bulk isotropic materials, ***International Journal of Heat and Mass Transfer* 172**, 121177 (2021). [IF=5.2]

6. **P. Jin**#, L. Xu*, T. Jiang, L. Zhang, and J. P. Huang*, Making thermal sensors accurate and invisible with an anisotropic monolayer scheme, ***International Journal of Heat and Mass Transfer* 163**, 120437 (2020). [IF=5.2]

7. **P. Jin**#, C. Wang#, F. Yang#, J. Liu, M. Lei, Z. Liu, L. Xu, E. J. Bergholtz*, and J. P. Huang*, Perfect robustness of anomalous convective heat transport using an exceptional point, to be submitted, (2023).

8. C. Wang#, **P. Jin**#,*, F. Yang, L. Xu*, and J. P. Huang*, Click Metamaterials: Fast Acquisition of Thermal Conductivity and Functionality Diversities, under review in ***Applied Physics Reviews*** (2023). https://arxiv.org/abs/2308.16057

9. H. Tan#, H. Cai, **P. Jin***, and J. P. Huang*, Dynamic thermal sensors with reconfigurable expanded-plane structures, under review in ***International Journal of Heat and Mass Transfer***, (2023). [IF=5.2]

10. J. Liu#, **P. Jin**, L. Xu, F. Yang, and J. P. Huang*, Robustly configurable heat transfer by spatiotemporal transformation thermotics, to be submitted, (2023).

11. F. Yang#, **P. Jin**, M. Lei, G. Dai, J. Wang*, and J. P. Huang*, Space-time thermal binary coding by spatiotemporally modulated metashell, ***Physical Review Applied* 19**, 054096 (2023).

Google scholar: https://scholar.google.com/citations?user=bF7xTPAAAAAJ&hl=zh-CN

Publication list

(First author#, Corresponding author*)

12. C. Zhang#,*, T. Li, **P. Jin**, Y. Yuan, X. Ouyang, F. Marchesoni, and J. P. Huang*,
    Extracting stellar emissivity via a machine learning analysis of MSX and LAMOST catalog data,
    Physical Review D **106**, 123035 (2022).

13. L. Xu#, J. Liu#, **P. Jin**, G. Xu, J. Li, X. Ouyang, Y. Li, C.-W. Qiu*, and J. P. Huang*,
    Blackhole-inspired thermal trapping with graded heat-conduction metadevices,
    National Science Review **10**, nwac159 (2023). [IF=20.6]

Conferences (Talk)

- PhotonIcs and Electromagnetics Research Symposium (PIERS), Online (2023)
- Annual Academic Conference of Dept. Physics, Fudan University (2023)
- Frontiers of International Soft Matter Research, Wenzhou Institute (2023)
- The 2nd International Conference on Thermodynamics and Thermal Metamaterials, Online (2022)
- The 6th National Workshop on Thermal Transport, Online (2021)
- The 6th National Conference on Statistical Physics and Complex Systems, Jilin University (2021)
- The 1st International Conference on Thermodynamics and Thermal Metamaterials, Online (2020)
- Academic Innovation Forum on "Physical Problems in Metamaterials" for Postgraduates, Online (2020)

Skills

- Programming via Matlab/Python; Comsol with Matlab; PSO; Machine learning (ANN)
- Photoshop; Adobe Ai; Shapr3D/KeyShot (Modeling/Rendering)
- GUI programming via Python (1 Chinese software copyright)