

# Tom Man Kwan

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Website: <https://tomkm.com/>

## Research Interests

High Energy Astrophysics      Plasma Physics      Multimessenger Astronomy  
Computer Simulations and Modelling      Accretion Physics      Black Holes and Neutron Stars

## Education

- 2023-present      Ph.D.  
The University of Hong Kong, Hong Kong  
Research Topic: General Relativistic Simulations of Black Hole  
Astrophysical Systems  
Supervisor: Dr Lixin Dai
- 2021-2023      Master of Philosophy  
The University of Hong Kong, Hong Kong  
Thesis: Simulating Spherical and Extreme Accretion Events Around  
Black Holes  
Supervisor: Dr Lixin Dai
- 2020-2021      Research Assistant  
The University of Hong Kong, Hong Kong  
Supervisor: Dr Lixin Dai
- 2017-2020      Bachelor of Science  
Double Major in Physics and Astronomy  
The University of Hong Kong, Hong Kong

## Publications

- [6] Middleton M., Gúrpide A., **Kwan T. M.**, Dai L., et al. Quasi-periodic eruptions as Lense–Thirring precession of super-Eddington flows, *MNRAS*, 2025 [[ADS](#)]
- [5] Xing Z., Fragos T., Zapartas E., **Kwan T. M.**, Dai L., et al. Formation of Wind-Fed Black Hole High-mass X-ray Binaries: The Role of Roche lobe Overflow Post Black-Hole Formation. *A&A*, 2025 [[ADS](#)]
- [4] Yao Y., Guolo M., et al., **Kwan T. M.** Sub-relativistic Outflow and Hours-Timescale Large-amplitude X-ray Dips during Super-Eddington Accretion onto a Low-mass Massive Black Hole in the Tidal Disruption Event AT2022Iri, *ApJ*, 2024 [[ADS](#)]

[3] **Kwan T. M.**, Dai L., Tchekhovskoy A. The Effects of Gas Angular Momentum on the Formation of Magnetically Arrested Disks and the Launching of Powerful Jets. *ApJL*, 2023 [[ADS](#)]

[2] Yang H., Yuan F., **Kwan T. M.**, Dai L. The properties of wind and jet from a super-Eddington accretion flow around a supermassive black hole. *MNRAS*, 2023 [[ADS](#)]

[1] Thomsen L. L., **Kwan T. M.**, Dai L., Wu S. & Ramirez-Ruiz E. Dynamical unification of tidal disruption events. *ApJL*, 2022 [[ADS](#)]

Link to [ADS Library](#)

## Contributed Talks

Jun 2023	International Conference, Astrophysical Black Holes: A Rapidly Moving Field, Hong Kong <i>Simulating Bondi-Like Accretion Flow Around Black Holes</i>
Jul 2023	European Astronomical Society Annual Meeting <i>Simulating Bondi-Like Accretion Flow Around Black Holes</i>
Aug 2023	Public Seminar, The University of Hong Kong <i>Spherical and Extreme Accretion Events Around Black Holes</i>
Dec 2023	The 32nd Texas Symposium on Relativistic Astrophysics <i>Simulating Super-Eddington Accretion and Outflow Around Stellar-Mass Black Holes</i>

## Co-supervision Experience

2023-present	Tao Ji, MPhil student Co-supervisor for research projects
2023-present	Zoe Cheuk Kwan Kan, Undergraduate Co-supervisor for final year project Thesis Title: Accretion Disks and Jets Around Prograde and Retrograde Black Holes
2022-2023	Siddharth Yajaman, Undergraduate Co-supervisor for final year project Thesis Title: GRMHD Simulations of Bondi Accretion in Black Holes

## Other Work Experience

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|--------------|---|
| 2021-present | Deployment and management of a new medium-scale HPC Facility and Cluster System<br>Including new 3000-CPU-cores Computing System, Parallel Storage System, Cooling System |
| 2020-2021    | Deployment of small computing cluster   |