

# Yuexin ZHANG

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<https://lzzyx96txdy.github.io>

## Education

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**Kapteyn Astronomical Institute, University of Groningen, NL** Oct 2019 –  
Expected Sep 2023  
PhD Candidate in Astronomy. Advisor: Mariano Méndez and Diego Altamirano  
**Department of Physics, Fudan University, CN** Sep 2015 – June 2019  
B.S. (*Honor*) in Physics. Advisor: Cosimo Bambi  
**Hamburg University, DE** Jul 2018  
Summer Exchange Student

## Experiences

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**University of Southampton, UK** Expected Feb 2023  
Visiting Researcher. PI: Diego Altamirano  
**Institute of High-Energy Physics, CAS, CN** Mar 2021 – May 2022  
Visiting Researcher. PI: Shuang-Nan Zhang and Jin-Lu Qu  
**Fudan University, CN** Jul 2020 – Dec 2020  
Visiting Researcher. PI: Cosimo Bambi  
**Shanghai Astronomical Observatory, CAS, CN** Jun 2019 – Sep 2019  
Summer Visiting Student. PI: Wenfei Yu

## Honors

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❖ CSC and UoG Joint Scholarship 2019 – 2023  
❖ Shanghai Outstanding Graduate 2019  
❖ Wangdao Scholar (named after the former president of Fudan) 2019

## Observation

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[1] *Insight-HXMT*, PI: Zhang, 10 ks on GRS 1915+105

## Publications

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- [1] Jin, P., Zhang, G., **Zhang, Y.** et al. (2023). The state transition from the super-critical to standard disk during the 2021 outburst in 4U 1543-47 revealed by Insight-HMXT. *Submitted to MNRAS*
- [2] Ma, R., Méndez, M., García, F. et al., **incl. Zhang, Y.** (2023). Variable corona during the transition from type-C to type-B quasi-periodic oscillations in the black hole X-ray binary MAXI J1820+070. *Submitted to MNRAS*.
- [3] **Zhang, Y.**, Méndez, M., García, F. et al. (2023). A NICER look at the jet-like corona of MAXI J1535–571 through type-B quasi-periodic oscillation. *Submitted to MNRAS*.
- [4] **Zhang, Y.**, Méndez, M., García, F. et al. (2022). The evolution of the high-frequency variability in the black hole candidate GRS 1915+105 as seen by RXTE. *Monthly Notices of the Royal Astronomical Society*, 514(2), 2891-2901

- [5] García, F., Karpouzas, K., Méndez, M. et al., **incl. Zhang, Y.** (2022). The evolving properties of the corona of GRS 1915+105: a spectral-timing perspective through variable-Comptonization modelling. *Monthly Notices of the Royal Astronomical Society*, 513(3), 4196-4207.
- [6] Liu, H., Fu, Y., Bambi, C. et al., **incl. Zhang, Y.** (2022). The disk wind in GRS 1915+105 as seen by Insight-HXMT. *The Astrophysical Journal*, 933(2), 122.
- [7] Yang, Z. X., Liang, Z., Bu, Q. C. et al., **incl. Zhang, Y.** (2022). The accretion flow geometry of MAXI J1820+070 through broadband noise research with Insight-HXMT. *The Astrophysical Journal*, 932(1), 7.
- [8] **Zhang, Y.**, Méndez, M., García, F. et al. (2022). The evolution of the corona in MAXI J1535-571 through type-C quasi-periodic oscillations with Insight-HXMT. *Monthly Notices of the Royal Astronomical Society*, 512(2), 2686-2696.
- [9] Méndez, M., Karpouzas, K., García, F. et al., **incl. Zhang, Y.** (2022). Coupling between the accreting corona and the relativistic jet in the microquasar GRS 1915+105. *Nature Astronomy*, 6(5), 577-583.
- [10] Karpouzas, K., Méndez, M., García, F. et al., **incl. Zhang, Y.** (2021). A variable corona for GRS 1915+105. *Monthly Notices of the Royal Astronomical Society*, 503(4), 5522-5533.
- [11] Tripathi, A., **Zhang, Y.**, Abdikamalov, A. B. et al. (2021). Testing general relativity with NuSTAR data of galactic black holes. *The Astrophysical Journal*, 913(2), 79.
- [12] Abdikamalov, A. B., Ayzenberg, D., Bambi, C. et al. **incl. Zhang, Y.** (2021). Implementation of a radial disk ionization profile in the relxill\_nk model. *Physical Review D*, 103(10), 103023.
- [13] Liu, H., Ji, L., Bambi, C. et al., **incl. Zhang, Y.** (2021). Testing evolution of LFQPOs with mass accretion rate in GRS 1915+105 with Insight-HXMT. *The Astrophysical Journal*, 909(1), 63.
- [14] **Zhang, Y.**, Abdikamalov, A. B., Ayzenberg, D. et al. (2019). Tests of the Kerr hypothesis with GRS 1915+105 using different RELXILL flavors. *The Astrophysical Journal*, 884(2), 147.
- [15] **Zhang, Y.**, Abdikamalov, A., Ayzenberg, D. et al. (2019). About the Kerr nature of the stellar-mass black hole in GRS 1915+105, *The Astrophysical Journal*, 875 (1), 41.
- [16] **Zhang, Y.**, Zhou, M., & Bambi, C. (2018). Iron line spectroscopy of black holes in asymptotically safe gravity. *The European Physical Journal C*, 78 (5), 376.

## Conferences and Talks

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- [1] NOVA Network NW3, Amsterdam, NL 19 Jan 2023  
“The jet-like corona of black-hole X-ray transients from the HIMS to the SIMS”
- [2] 44th COSPAR scientific assembly, Athens, GR 16–24 Jul 2022  
“Corona evolution of MAXI J1535–571 revealed by type-C quasi-periodic oscillations observed with Insight-HXMT”  
“The evolution of the high-frequency variability in GRS 1915+105 as seen by RXTE”
- [3] Black hole accretion under the X-ray microscope, Madrid, ES 14–17 Jun 2022  
“The evolution of the corona in MAXI J1535–571 through type-C quasi-periodic oscillations with Insight-HXMT”
- [4] China astronomy annual meeting (online), Nanchong, CN 2–6 Dec 2021  
“Mapping the Comptonization region of black holes up to 100 keV through quasi-

*periodic oscillations in the intermediate state with Insight-HXMT”*

- [5] 9th China-EU *Insight*-HXMT video meeting (online), Beijing, CN 11–12 Oct 2021
- [6] The future of X-ray timing, Amsterdam, NL 21–25 Oct 2019
- [7] Recent progress in relativistic astrophysics, Shanghai, CN 6–8 May 2019