COSIMO BAMBI

Date and Place of Birth: 21 September 1980, Florence (Italy)

Citizenship: Italian (Passport), Chinese (Permanent Residence Permit)

Contact details Department of Physics, Fudan University, 2005 Songhu Road, Shanghai 200438, China

Tel: +86-187-2171-1498, E-mail: bambi@fudan.edu.cn

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Current Academic Position

2016 - Present Xie Xide Junior Chair Professor of Physics. Fudan University (China)

Education

2007 Ph.D. in Physics. Ferrara University (Italy). Supervisor: Prof. Alexander D. Dolgov.

2003 Laurea in Physics summa cum laude. Florence University (Italy).

Previous Academic Positions

2015 - 2018	Humboldt Fellow (visiting position). University of Tübingen (Germany)
2013 - 2015	Full Professor. Fudan University (China)
2012 - 2013	Associate Professor. Fudan University (China)
2011 - 2012	Postdoctoral Research Fellow. Dvali's Group, LMU Munich (Germany)
2008 - 2011	Project Researcher. IPMU, The University of Tokyo (Japan)
2007 - 2008	Postdoctoral Research Fellow. Wayne State University (Michigan)

Editorial Positions

2023 – Present	Editor-in-Chief. Handbook of Quantum Gravity (Springer Singapore)
2022 - Present	Founding Editor. Springer Series in Astrophysics and Cosmology (Springer Nature)
2022 - Present	Editor-in-Chief. Handbook of X-ray and Gamma-ray Astrophysics (Springer Singapore)
2020-Present	Editor-in-Chief. Handbook of Gravitational Wave Astronomy (Springer Singapore)
2018 – Present	Editorial Advisory Board Member. iScience (CellPress), IF: 6.107

Honors and Awards (selected)

- 2022 Magnolia Gold Award from the Municipality of Shanghai, China
- 2022 International Excellent Young Scientists Award from NSFC, China
- 2019 Team Leader of an International ISSI Team, Switzerland
- 2019 Extraordinary 2025 Elite Award from Fudan University, China
- 2018 Magnolia Silver Award from the Municipality of Shanghai, China
- 2018 Xu Guangqi Prize from the Embassy of Italy in Beijing, Italy
- 2016 Invitation Fellowship for Research in Japan from JSPS, Japan
- 2016 Named Xie Xide Junior Chair Professor of Physics at Fudan University, China
- 2015 Named Humboldt Fellow (Experienced Researcher) from Humboldt Foundation, Germany
- 2012 Thousand Young Talents Award (Qingnian Qianren) from the State Council of PRC, China

Member

2023 - Present	Einstein Probe Science Team	2022 - Present	TianQin Science Team
2021 - Present	Athena Science Team	2019 - Present	Insight-HXMT Science Team
2017 - Present	American Physical Society	2015 - Present	Association of Italian Scholars in China
2014 - Present	XTP/eXTP Science Team	2013 - Present	Chinese Physical Society
2013 – Present	International Society on General R	elativity and Gra	avitation

Publication Summary

Books: 1 monograph, 2 textbooks, 3 encyclopedias, 4 edited books, 1 popular science book

Total number of SCI papers: 218 SCI papers as first/corresponding author: 194

Total number of citations: 10,400 (Google Scholar) h-index: 55 (Google Scholar)

Google Scholar Profile

Among the 194 SCI papers as first/corresponding author:

1 Reviews of Modern Physics (single author)

2 Physical Review Letters

65 PRD, 30 ApJ, 27 JCAP, 25 EPJC, 10 PLB, 9 MNRAS, 7 CQG, 2 JHEP, 1 SSRv

Representative publications (* is to indicate the corresponding author)

- 1. <u>C. Bambi*</u>, L.W. Brenneman, T. Dauser, J.A. Garcia, V. Grinberg, et al., *Towards precision measurements of accreting black holes using X-ray reflection spectroscopy*, Space Sci. Rev. **217**, 65 (2021).
- 2. A. Tripathi, Y. Zhang, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi*</u>, J. Jiang, H. Liu and M. Zhou, *Testing General Relativity with NuSTAR data of Galactic Black Holes*, <u>Astrophys. J. 913</u>, 79 (2021).
- 3. Z. Cao, S. Nampalliwar, <u>C. Bambi</u>*, T. Dauser and J.A. Garcia, *Testing general relativity with the reflection spectrum of the supermassive black hole in 1H0707–495*, Phys. Rev. Lett. **120**, 051101 (2018).
- 4. <u>C. Bambi</u>*, A. Cardenas-Avendano, T. Dauser, J.A. Garcia and S. Nampalliwar, *Testing the Kerr black hole hypothesis using X-ray reflection spectroscopy*, Astrophys. J. 842, 76 (2017).
- C. Bambi, Testing black hole candidates with electromagnetic radiation, Rev. Mod. Phys. 89, 025001 (2017).
- C. Bambi and L. Modesto, Rotating regular black holes, Phys. Lett. B 721, 329-334 (2013).
- C. Bambi and K. Freese, Apparent shape of super-spinning black holes, Phys. Rev. D 79, 043002 (2009).

Student Supervision Summary

Supervised 56 theses (33 Bachelor theses, 10 Master theses, and 13 Doctoral theses)

Services

Referee

A&A, <u>ApJ</u>, Astroparticle Physics, Chinese Physics C, CQG, EPJC, EPJP, EP Letters, GRG, IJMPD, JCAP, JHEP, MNRAS, <u>Nature</u>, NPB, PRD, <u>PRL</u>, PLB, Physics of the Dark Universe, Scientific Reports

Proposal Reviewer Chang Jiang Scholars Program (China)

Czech Science Foundation (Czech Republic)

German Academic Exchange Service, DAAD (Germany)

German Research Foundation, DFG (Germany) National Research Foundation (South Africa)

Natural Sciences and Engineering Research Council of Canada, NSERC (Canada)

Book Proposal Reviewer Cambridge University Press, IOP Publishing, Springer Nature

External Grants as PI

NSFC (China). Research Fund for International Excellent Young Scientists
 Advanced reflection models for precision measurements of accreting black holes, Grant No. 12250610185
 Budget: 800k CNY (120k EUR). Period: 2023-2024 (2 years)

 Science and Technology Commission of Shanghai Municipality (China). General Grant Studying the accretion process of Galactic black holes with Insight-HXMT data, Grant No. 22ZR1403400 Budget: 200k CNY (28k EUR). Period: 2022-2025 (3 years)

3. NSFC (China). General Grant

Testing Einstein's gravity using the continuum-fitting method, Grant No. 11973019

Budget: 630k CNY (80k EUR). Period: 2020-2023 (4 years)

4. ISSI (Switzerland). International ISSI Team

Can we use X-ray reflection spectroscopy for precision measurements of accreting black holes?, Team ID 458 Budget: 24k CHF (22k EUR). Period: 2019-2021 (2 years)

Shanghai Municipal Education Commission (China). Grant for Innovative Programs
 Testing Einstein's gravity using X-ray reflection spectroscopy, Grant No. 2019-01-07-00-07-E00035
 Budget: 3M CNY (400k EUR). Period: 2019-2023 (5 years)

6. NSFC (China). Grant for Astrophysics

Testing astrophysical black holes with X-ray observations, Grant No. U1531117

Budget: 450k CNY (60k EUR). Period: 2016-2018 (3 years)

- 7. Alexander von Humboldt Foundation (Germany). Humboldt Fellowship for Experienced Researchers **Budget:** 43k EUR. Period: 2015-2018 (12 months)
- 8. Shanghai Municipal Education Commission (China). Grants for Innovative Programs

 A study to explore the possibility of observing quantum gravity effects in the gravitational collapse of very
 massive stars, Grant No. 14ZZ001

Budget: 160k CNY (20k EUR). Period: 2014-2016 (3 years)

9. NSFC (China). Grant for Young Scientists

A numerical study to investigate the possibility of testing the gravitational collapse and the cosmic censorship with observations, Grant No. 11305038

Budget: 220k CNY (27k EUR). Period: 2014-2016 (3 years)

- 10. State Council of PRC (China). Thousand Young Talents Program (Qingnian Qianren Jihua) **Budget: 1.5M CNY** (180k EUR). Period: 2012-2015 (3 years)
- 11. JSPS (Japan). Grant-in-Aid for Young Scientists B

Study of the accretion flow onto super-spinars, Grant No. 22740147

Budget: 3.12M JPY (30k EUR). Period: 2010-2012 (2 years)

External Grants as Participant

1. NSFC (China). Grant for International Collaborations; NSFC-RSF Joint Grant (China-Russia)

Theoretical Studies of Nonlinear Primordial Perturbations and its Testing in Cosmological Observations (PI: Yang Zhang), Grant No. 12261131497

Budget: 1.05M CNY (140k EUR). Period: 2023-2025 (3 years)

Internal Grants as PI

- 1. Fudan University (China). Excellence 2025 Grant. Grant No. JIH1512604 Budget: 300k CNY (40k EUR). Period: 2020-2023 (3 years)
- Fudan University (China). First Class Construction Project
 Testing the Kerr Paradigm using X-ray reflection spectroscopy, Grant No. IDH1512060
 Budget: 300k CNY (40k EUR). Period: 2017-2019 (3 years)
- Department of Physics, Fudan University (China). Seed Funding Astrophysical implications of quantum gravity
 Budget: 100k CNY (12k EUR). Period: 2013-2014 (1 year)
- Department of Physics, Fudan University (China). Start-Up Research Grant Grant No. EZH1512600/010
 Budget: 400k CNY (50k EUR). Period: 2012-
- Fudan University (China). Start-Up Research Grant Testing the Kerr Black Hole Hypothesis, Grant No. EZH1512514 Budget: 800k CNY (100k EUR). Period: 2012-
- 6. IPMU, The University of Tokyo (Japan). Start-Up Research Grant **Budget: 1.5M JPY** (15k EUR). Period: 2008-2011 (3 years)

Conference/Workshop/School Organization

LOC Chair I-HOW/COSPAR Workshop: A New Era of High-Resolution X-Ray Spectroscopy

19-30 August 2024, Shanghai, China

SOC Member 45th COSPAR Scientific Assembly, Scientific Event E1.9:

Spectral/Timing Properties of AGN: Theory and Observations

13–21 July 2024, Busan, South Korea

LOC Chair Fudan-Tübingen Workshop on the Relativistic and Exotic Universe

April 2024, Shanghai, China

Chair 4th China-India Workshop on High Energy Astrophysics

21–23 October 2023, Shanghai, China

Chair New Frontiers in GRMHD Simulations of Accreting Black Holes

3–6 April 2023, online meeting

Chair 3rd China-India Workshop on High Energy Astrophysics

28 November-2 December 2022, online meeting

Chair Modeling black hole X-ray emission: recent progress and future developments

8–10 June 2022, online meeting

Chair Recent Progress on Gravity Tests

16-18 February 2022, online meeting. INSPIRE ID: C22-02-16

Chair 2nd China-India Workshop on High Energy Astrophysics

6–10 December 2021, online meeting

SOC Member International Workshop on Relativistic Astrophysics and Gravitation

12-14 May 2021, online meeting

Chair China-India Workshop on High Energy Astrophysics

6–8 November 2020, online meeting. INSPIRE ID: C20-11-06

Chair Accretion 2020 @ Fudan

21–23 October 2020, online meeting. INSPIRE ID: C20-07-01

Chair Recent Progress in Relativistic Astrophysics

6-8 May 2019, Shanghai, China. INSPIRE ID: C19-05-06.1

Chair International Conference on Quantum Gravity

 $26\hbox{--}28$ March 2018, Shenzhen, China. INSPIRE ID: C18-03-26.1

Chair Winter School on X-ray Data Analysis

22 January-2 February 2018, Shanghai, China

SOC Member High-throughput X-ray Astronomy in the eXTP era

6-8 February 2017, Rome, Italy

Chair Mini-Workshop on Black Holes

6-11 November 2017, Shanghai, China

Chair 2nd Fudan Winter School on Astrophysical Black Holes

9–14 January 2017, Shanghai, China. INSPIRE ID: C17-01-09.2

LOC Chair *eXTP Science Workshop*

14–15 April 2016, Shanghai, China

Chair Black Holes and Friends 2

11–13 April 2016, Shanghai, China. INSPIRE ID: C16-04-11.1

Chair Mini-Workshop on Black Holes

24 November 2015, Shanghai, China

Chair Black Holes and Friends

30 March-1 April 2015, Shanghai, China. INSPIRE ID: C15-03-30

Chair Fudan Winter School on Astrophysical Black Holes

10–15 February 2014, Shanghai, China. INSPIRE ID: C14-02-10

Chair Workshop on Collapsing Objects

21–24 October 2013, Shanghai, China. INSPIRE ID: C13-10-21

Chair Testing Gravity with Astrophysical and Cosmological Observations

23 January–3 February 2012, Kashiwa, Japan. INSPIRE ID: C12-01-23

Chair IPMU Workshop on Black Holes

21–25 February 2011, Kashiwa, Japan. INSPIRE ID: C11-02-21

LIST OF PUBLICATIONS: BOOKS

Monographs

1. <u>C. Bambi</u>, Black Holes: A Laboratory for Testing Strong Gravity (Springer Singapore, 2017). Hardcover ISBN: 9789811045233. eBook ISBN: 9789811045240.

Textbooks

- C. Bambi, Introduction to General Relativity: A Course for Undergraduate Students of Physics (Springer Singapore, 2018). Softcover ISBN: 9789811310898. eBook ISBN: 9789811310904.
 - C. Bambi, Introduction to General Relativity: A Course for Undergraduate Students of Physics [in Chinese] (Fudan University Press, 2020). Softcover ISBN: 9787309151503.
 - C. Bambi, Introducción a la relatividad general: Un curso para estudiantes de física [in Spanish] (Editorial Reverté, 2021). Softcover ISBN: 9788429144376. eBook ISBN: 9788429196351.
 - C. Bambi, Introduction to General Relativity: A Course for Undergraduate Students of Physics [in Persian] (Jahan-Adib, 2021). Softcover ISBN: 9786005440546.
- 2. <u>C. Bambi</u> and A.D. Dolgov, *Introduction to Particle Cosmology: The Standard Model of Cosmology and its Open Problems* (Springer-Verlag Heidelberg Berlin, 2016).

Hardcover ISBN: 9783662480779. eBook ISBN: 9783662480786.

<u>C. Bambi</u> and A.D. Dolgov, Introduction to Particle Cosmology: The Standard Model of Cosmology and its Open Problems [in Chinese] (Fudan University Press, 2017). Softcover ISBN: 9787309127942.

Encyclopedias

1. <u>C. Bambi</u>, L. Modesto and I.L. Shapiro (Editors), *Handbook of Quantum Gravity* (Springer Singapore, in preparation, expected in 2024). Hardcover ISBN: TBA. eBook ISBN: TBA. Living Edition ISBN: 9789811930799.

Expected 101 chapters, about 200 authors, about 4,000 pages.

- C. Bambi and A. Santangelo (Editors), Handbook of X-ray and Gamma-ray Astrophysics (Springer Singapore, in press, 2024). Hardcover ISBN: 9789811969591. eBook ISBN: TBA.
 Living Edition ISBN: 9789811645440.
 - 156 chapters, 371 authors, about 6,000 pages.
- 3. C. Bambi, S. Katsanevas and K. Kokkotas (Editors), Handbook of Gravitational Wave Astronomy (Springer Singapore, 2022). Hardcover ISBN: 9789811643057. eBook ISBN: 9789811643064. Living Edition ISBN: 9789811547027.

45 chapters, 101 authors, 1,926 pages.

Popular Science Books

- 1. <u>C. Bambi</u>, Niente é impossibili: Viaggiare nel tempo, attraversare i buchi neri e altre sfide scientifiche [in Italian] (il Saggiatore, 2020). Softcover ISBN: 9788842826941. eBook ISBN: 9788865768391.
 - C. Bambi, Nothing is impossible [in Chinese] (Fudan University Press, 2023). Softcover ISBN: 9787309166262.

Edited Books

- 1. <u>C. Bambi</u>, Y. Mizuno, S. Shashank and F. Yuan (Editors), *New Frontiers in GRMHD Simulations* (Springer Singapore, in preparation, expected in 2025).
- 2. <u>C. Bambi</u> and A. Cardenas-Avendano (Editors), *Recent Progress on Gravity Tests: Challenges and Future Perspectives* (Springer Singapore, in preparation, expected in 2024).
- 3. <u>C. Bambi</u> and J. Jiang (Editors), *High Resolution X-Ray Spectroscopy: Instrumentation, Data Analysis, and Science* (Springer Singapore, 2023). Hardcover ISBN: 9789819944088. eBook ISBN: 9789819944095.
- 4. <u>C. Bambi</u> (Editor), Regular Black Holes: Towards a New Paradigm of Gravitational Collapse (Springer Singapore, 2023). Hardcover ISBN: 9789819915958. eBook ISBN: 9789819915965.
- 5. <u>C. Bambi</u> (Editor), Tutorial Guide to X-ray and Gamma-ray Astronomy: Data Reduction and Analysis (Springer Singapore, 2020). Hardcover ISBN: 9789811563362. eBook ISBN: 9789811563379.
- 6. <u>C. Bambi</u> (Editor), Astrophysics of Black Holes: From Fundamental Aspects to Latest Developments (Springer-Verlag Heidelberg Berlin, 2016).

Hardcover ISBN: 9783662528570. eBook ISBN: 9783662528594.

Videos

1. C. Bambi, Astrophysical Black Holes (Springer, 2022). Online ISBN: 9783031179167.

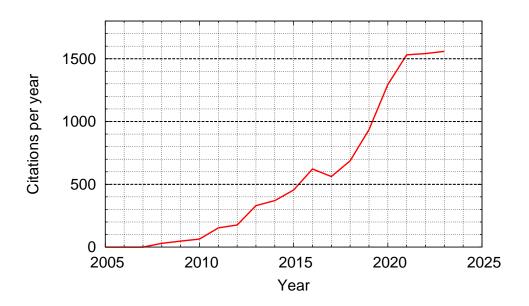
LIST OF PUBLICATIONS: ARTICLES

(In the list below, * is to indicate the corresponding author)

Citation Summary (from Google Scholar)

Google Scholar Profile: https://scholar.google.com/citations?user=W9EMTqIAAAAJ&hl=en Citations of this year in the table and in the plot are updated to November 11, 2023.

	All years	Since 2018
Citations	10,400	7,558
h-index	55	47
i10-index	194	167



Papers in refereed journals

- 1. B. Narzilloev, A. Abdujabbarov, B. Ahmedov and <u>C. Bambi*</u>, Kerr-Taub-NUT spacetime to explain the jet power and the radiative efficiency of astrophysical black holes, Phys. Rev. D **108**, 103013 (2023).
- 2. J. Tao, S. Riaz, B. Zhou, A.B. Abdikamalov, C. Bambi* and D. Malafarina, Testing the δ-Kerr metric with black hole X-ray data, Phys. Rev. D 108, 083036 (2023).
- 3. S. Riaz, A.B. Abdikamalov and <u>C. Bambi*</u>, Impact of the returning radiation in current tests of the Kerr black hole hypothesis using X-ray reflection spectroscopy, Eur. Phys. J. C **83**, 838 (2023).
- 4. T. Mirzaev, A.B. Abdikamalov, A.A. Abdujabbarov, D. Ayzenberg, B. Ahmedov and <u>C. Bambi*</u>, Observational appearance of Kaluza-Klein black holes, Eur. Phys. J. C 83, 800 (2023).

- Q. Yuan, P. Kushwaha, A.C. Gupta, A. Tripathi, P.J. Wiita, M. Zhang, X. Liu, A. Lähteenmäki, M. Tornikoski, J. Tammi, V. Ramakrishnan, L. Cui, X. Wang, M.F. Gu, <u>C. Bambi</u> and A.E. Volvach, *Multiwavelength temporal variability of the blazar PKS 1510–089*, Astrophys. J. 953, 47 (2023).
- 6. S. Vagnozzi, R. Roy, Y.D. Tsai, L. Visinelli, M. Afrin, A. Allahyari, P. Bambhaniya, D. Dey, S.G. Ghosh, P.S. Joshi, K. Jusufi, M. Khodadi, R.K. Walia, A. Övgün and <u>C. Bambi</u>, Horizon-scale tests of gravity theories and fundamental physics from the Event Horizon Telescope image of Sagittarius A*, Class. Quantum Grav. 40, 165007 (2023).
- H. Liu, J. Jiang, Z. Zhang, <u>C. Bambi*</u>, A.C. Fabian, J.A. García, A. Ingram, E. Kara. J.F. Steiner, J.A. Tomsick, D.J. Walton and A.J. Young, *High-density reflection spectroscopy for black hole X-ray binaries in the hard state*, Astrophys. J. **951**, 145 (2023).
- 8. <u>C. Bambi*</u>, X-Ray Tests of General Relativity with Black Holes, Symmetry 15, 1277 (2023).
- 9. H. Liu, <u>C. Bambi</u>*, J. Jiang, J.A. García, L. Ji, L. Kong, X. Ren, S. Zhang and S. Zhang, *The hard to soft transition of GX 339-4 as seen by Insight-HXMT*, Astrophys. J. **950**, 5 (2023).
- Z. Zhang, J. Jiang, H. Liu, <u>C. Bambi</u>*, C.S. Reynolds, A.C. Fabian, T. Dauser, K. Madsen, A. Young, L. Gallo, Z. Yu and J. Tomsick, *The Low Temperature Corona in ESO 511–G030 Revealed by NuSTAR and XMM-Newton*, Astrophys. J. **949**, 4 (2023).
- 11. Z. Yu*, J. Jiang, <u>C. Bambi</u>, L.G. Gallo, D. Grupe, A.C. Fabian, C.S. Reynolds and W.N. Brandt, An XMM-Newton Study of Narrow-Line Seyfert 1 Galaxies at z = 0.35 0.92, MNRAS **522**, 5456-5468 (2023).
- 12. G. Mall, A. Tripathi, A.B. Abdikamalov and <u>C. Bambi*</u>, Impact of ionization and electron density gradients in X-ray reflection spectroscopy measurements, MNRAS **517**, 5721-5733 (2022).
- 13. S. Shashank, S. Riaz, A.B. Abdikamalov and <u>C. Bambi*</u>, Testing relativistic reflection models with GRMHD simulations of accreting black holes, Astrophys. J. **938**, 53 (2022).
- 14. S. Riaz, S. Shashank, R. Roy, A.B. Abdikamalov, D. Ayzenberg, C. Bambi*, Z. Zhang and M. Zhou, Testing regular black holes with X-ray and GW data, JCAP 10 (2022) 040.
- 15. J. Gu, S. Riaz, A.B. Abdikamalov, D. Ayzenberg and <u>C. Bambi*</u>, *Probing bumblebee gravity with black hole X-ray data*, Eur. Phys. J. C **82**, 708 (2022).
- 16. K. Jusufi, Saurabh K., M. Azreg-Aïnou, M. Jamil, Q. Wu and <u>C. Bambi</u>, Constraining Wormhole Geometries using the Orbit of S2 Star and the Event Horizon Telescope, Eur. Phys. J. C 82, 633 (2022).
- 17. H. Liu, Y. Fu, <u>C. Bambi*</u>, J. Jiang, M.L. Parker, L. Ji, L. Kong, L. Zhang, S. Zhang and Y. Zhang, *The disk wind in GRS 1915+105 as seen by Insight-HXMT*, Astrophys. J. **933**, 122 (2022).
- 18. J. Jiang*, A.B. Abdikamalov, <u>C. Bambi</u> and C.S. Reynolds, *Black Hole Spin Measurements Based on a Thin Disc Model with Finite Thickness I. An example study of MCG-06-30-15*, MNRAS **514**, 3246-3259 (2022).
- 19. H. Liu, J. Jiang, Z. Zhang, <u>C. Bambi</u>*, L. Ji, L. Kong and S. Zhang, *Rapidly alternating flux states of GX 339-4 during its 2021 outburst captured by Insight-HXMT*, MNRAS **513**, 4308-4317 (2022).
- 20. S. Shashank and <u>C. Bambi*</u>, Constraining the Konoplya-Rezzolla-Zhidenko deformation parameters III: limits from stellar-mass black holes using gravitational-wave observations, Phys. Rev. D **105**, 104004 (2022).
- 21. Q. Liu, H. Liu, <u>C. Bambi*</u> and L. Ji, The spins of the Galactic black holes in MAXI J1535–571 and 4U 1630–472 from Insight-HXMT, MNRAS **512**, 2082-2092 (2022).
- 22. S. Riaz, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, H. Wang and Z. Yu, Reflection spectra of accretion disks illuminated by disk-like coronae, Astrophys. J. **925**, 51 (2022).

- 23. Z. Zhang, H. Liu, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>* and M. Zhou, *Testing the Kerr black hole hypothesis with GRS 1716–249 by combining the continuum-fitting and the iron-line methods*, Astrophys. J. **924**, 72 (2022).
- 24. A. Tripathi, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi*</u>, V. Grinberg, H. Liu and M. Zhou, *Testing the Kerr black hole hypothesis with the continuum-fitting and the iron line methods: the case of GRS 1915+105*, JCAP 01 (2022) 019.
- 25. A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi*</u>, H. Liu and A. Tripathi, *A reflection model with a radial disk density profile*, Astrophys. J. **923**, 175 (2021).
- 26. B. Narzilloev, I. Hussain, A. Abdujabbarov, B Ahmedov and <u>C. Bambi*</u>, Dynamics and Fundamental Frequencies of Test Particles Orbiting Kerr-Newman-NUT-Kiselev Blacks Hole in Rastall Gravity, Eur. Phys. J. Plus **136**, 1032 (2021).
- 27. Z. Yu, Q. Jiang, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, H. Liu, S. Nampalliwar and A. Tripathi, Constraining the Konoplya-Rezzolla-Zhidenko deformation parameters II: limits from stellar-mass black hole X-ray data, Phys. Rev. D **104**, 084035 (2021).
- 28. B. Narzilloev, S. Shaymatov, I. Hussain, A. Abdujabbarov, B Ahmedov and <u>C. Bambi*</u>, Motion of particles and gravitational lensing around the (2+1)-dimensional BTZ black holes in Gauss-Bonnet gravity, Eur. Phys. J. C 81, 849 (2021).
- 29. B. Narzilloev, D. Malafarina, A. Abdujabbarov, B Ahmedov and <u>C. Bambi*</u>, Particle motion around a static axially symmetric wormhole, Phys. Rev. D **104**, 064016 (2021).
- 30. H. Liu*, M.L. Parker, J. Jiang, E. Kara, <u>C. Bambi</u>, D. Grupe and S. Komossa, *A systematic study of photoionized emission and warm absorption signatures of the NLS1 Mrk 335*, MNRAS **506**, 5190-5200 (2021).
- 31. R. Roy, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, S. Riaz and A. Tripathi, *Testing the Weak Equivalence Principle near black holes*, Phys. Rev. D **104**, 044001 (2021).
- 32. A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, S. Nampalliwar and A. Tripathi, *Constraining the Konoplya-Rezzolla-Zhidenko deformation parameters: Limits from supermassive black hole X-ray data*, Phys. Rev. D **104**, 024058 (2021).
- 33. <u>C. Bambi*</u>, L.W. Brenneman, T. Dauser, J.A. Garcia, V. Grinberg, A. Ingram, J. Jiang, H. Liu, A.M. Lohfink, A. Marinucci, G. Mastroserio, R. Middei, S. Nampalliwar, A. Niedzwiecki, J.F. Steiner, A. Tripathi and A.A. Zdziarski, *Towards precision measurements of accreting black holes using X-ray reflection spectroscopy*, Space Sci. Rev. **217**, 65 (2021).
- 34. A. Tripathi, B. Zhou, A.B. Abdikamalov, D. Ayzenberg and <u>C. Bambi*</u>, Constraints on Einstein-Maxwell dilaton-axion gravity from X-ray reflection spectroscopy, JCAP 07 (2021) 002.
- 35. S. Shaymatov, B. Narzilloev, A. Abdujabbarov and <u>C. Bambi</u>, Charged particle motion around magnetized Reissner-Nordström black hole, Phys. Rev. D **103**, 124066 (2021).
- 36. A. Tripathi, A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi*</u> and H. Liu, *Impact of the disk thickness on X-ray reflection spectroscopy measurements*, Astrophys. J. **913**, 129 (2021).
- 37. A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, H. Liu and Y. Zhang, *Implementation of a radial disk ionization profile in the* relxill_nk *model*, Phys. Rev. D **103**, 103023 (2021).
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- 162. Z. Li, L. Kong and <u>C. Bambi</u>*, Testing the nature of the supermassive black hole candidate in SgrA* with light curves and images of hot spots, Astrophys. J. 787, 152 (2014).
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- 167. <u>C. Bambi</u>, Testing the Bardeen metric with the black hole candidate in Cygnus X-1, Phys. Lett. B **730**, 59-62 (2014).
- 168. <u>C. Bambi</u> and D. Malafarina, Kα iron line profile from accretion disks around regular and singular exotic compact objects, Phys. Rev. D 88, 064022 (2013).
- 169. <u>C. Bambi</u>, Measuring the Kerr spin parameter of a non-Kerr compact object with the continuum-fitting and the iron line methods, JCAP 08 (2013) 055.
- 170. <u>C. Bambi</u>, D. Malafarina and L. Modesto, *Non-singular quantum-inspired gravitational collapse*, Phys. Rev. D 88, 044009 (2013).
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- 175. <u>C. Bambi</u>, Broad Kα iron line from accretion disks around traversable wormholes, Phys. Rev. D **87**, 084039 (2013).
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Conference proceedings (refereed and non-refereed articles)

- 1. <u>C. Bambi*</u>, A.B. Abdikamalov, H. Liu, S. Riaz, S. Shashank and M. Zhou, *Testing General Relativity with Black Hole X-Ray Data and ABHModels*, talk given at "Frascati Workshop 2023: Multifrequency Behaviour of High Energy Cosmic Sources XIV" (12-17 June 2023, Palermo, Italy) [arXiv:2307.12755 [astro-ph.HE]].
- 2. <u>C. Bambi</u>, Testing General Relativity with black hole X-ray data: a progress report, Arab. J. Math 11, 81-90 (2022). https://doi.org/10.1007/s40065-021-00336-y
- 3. <u>C. Bambi</u>, Testing General Relativity with black hole X-ray data: recent progress and future developments, in 2021 Gravitation, edited by E. Augé et al. (ARISF, 2021), pp. 69-72.
- 4. C. Bambi, Testing General Relativity with Black Hole X-ray Data, Astronomy Reports 65, 902-905 (2021).
- 5. P. Uttley, R. den Hartog, <u>C. Bambi</u>, et al., An x-ray interferometry concept for the ESA Voyage 2050 programme, Proc. SPIE 11444, 114441E (2020).
- 6. A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u> and S. Nampalliwar, RELXILL_NK: A Black Hole Relativistic Reflection Model for Testing General Relativity, Proceedings 17, 7 (2019).
- 7. C. Bambi, Astrophysical Black Holes: A Review, PoS MULTIF2019 (2020) 028.
- 8. A.B. Abdikamalov, D. Ayzenberg, <u>C. Bambi</u>*, et al., *Testing general relativity with supermassive black holes using X-ray reflection spectroscopy*, Proceedings **17**, 2 (2019).
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- 10. <u>C. Bambi</u>, Testing the Kerr black hole hypothesis with RELXILL_NK, J. Phys. Conf. Ser. **942**, 012004 (2017).
- 11. S.N. Zhang, et al., eXTP enhanced X-ray Timing and Polarimetry Mission, Proc. SPIE **9905**, 99051Q (2016).

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- 13. <u>C. Bambi</u>, Testing the Kerr Paradigm with the Black Hole Shadow, in Proceedings of the Fourteenth Marcel Grossmann Meeting on General Relativity, edited by M. Bianchi, R.T. Jantzen and R. Ruffini, (World Scientific, Singapore, 2017), pp. 3494-3499.
- 14. I. Mandel, et al., Relativistic astrophysics at GR20, Gen. Rel. Grav. 46, 1688 (2014).
- 15. <u>C. Bambi</u>, Testing the nature of astrophysical black hole candidates, Springer Proc. Phys. **145**, 81-87 (2014).
- 16. <u>C. Bambi</u>, Compact objects with spin parameter $a_* > 1$, in 2011 Gravitational Waves and Experimental Gravity, edited by E. Augé et al. (The Gioi Publishers, Ha Noi, Vietnam, 2011), pp. 89-92.
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- 18. <u>C. Bambi</u>, Numerical simulations of the accretion process in Kerr spacetimes with arbitrary value of the Kerr parameter, in Proceedings of the Nineteenth Workshop on General Relativity and Gravitation, edited by M. Saijo et al., pp. 109-112 (2010).
- 19. <u>C. Bambi</u>, Testing the black hole paradigm with future observations of SgrA*, ASP Conf. Ser. **439**, 340-343 (2011).
- 20. <u>C. Bambi</u>, K. Freese and R. Takahashi, *Is the Carter-Israel conjecture correct?*, in *Windows on the Universe*, edited by L. Celnikier et al. (The Gioi Publishers, Ha Noi, Vietnam, 2010), pp. 575-578.
- 21. <u>C. Bambi</u>, Primordial antimatter in the contemporary universe, Frascati Phys. Ser. **45**, 129-136 (2007).

Conference proceedings (as editor)

- 1. <u>C. Bambi</u> and S. Nampalliwar (Editors), *Recent Progress in Relativistic Astrophysics*, Proceedings, Volume 17 (2019), proceedings of "Recent Progress in Relativistic Astrophysics" (6-8 May 2019, Shanghai, China).
- G. Calcagni, <u>C. Bambi</u> and L. Modesto (Editors), Gravity, Black Holes and Cosmology XXI, special issue of Universe (2018), proceedings of "International Conference on Quantum Gravity" (26-28 March 2018, Shenzhen, China).

White Papers

- 1. P. Uttley, R. den Hartog, <u>C. Bambi</u>, et al., *The high energy universe at ultra-high resolution: the power and promise of X-ray interferometry*, ESA's Voyage 2050 White Paper [arXiv:1908.03144 [astro-ph.HE]].
- 2. J. McEnery, et al., All-sky Medium Energy Gamma-ray Observatory: Exploring the Extreme Multimessenger Universe, Astro2020 APC White Paper [arXiv:1907.07558 [astro-ph.IM]].

SUPERVISION OF STUDENTS AND POSTDOCS

Undergraduate Students (followed by the position found after the Bachelor)

- 1. Qunfeng Jiang (B.S. in Physics 2023, Fudan University) \rightarrow The University of Hong Kong (M.S. student)
- 2. Jiale Gu (B.S. in Physics 2022, Liaoning University) \rightarrow Fudan University (Ph.D. student)
- 3. Kexin Huang (B.S. in Physics 2022, Fudan University) \rightarrow Fudan University (M.S. student)
- 4. Qichun Liu (B.S. in Physics 2022, Fudan University) \rightarrow Tsinghua University (Ph.D. student)
- 5. Haiyang Wang (B.S. in Physics 2022, Fudan University) → Cambridge University (M.S. student)
- 6. Zichao Wang (B.S. in Physics 2022, Fudan University) → Fudan University (M.S. student)
- 7. Zhibo Yu (B.S. in Physics 2022, Fudan University) → Penn State University (Ph.D. student)
- 8. Yao Zhang (B.S. in Physics 2022, Fudan University) → Tsinghua University (Ph.D. student)
- 9. Shuaitongze Zhao (B.S. in Physics 2022, SAU) → Fudan University (Ph.D. student)
- 10. Nan Li (B.S. in Physics 2021, Fudan University) → Fudan University (M.S. student)
- 11. Feiyang Liu (B.S. in Physics 2021, Fudan University) → Fudan University (Ph.D. student)
- 12. Dongnuo Lv (B.S. in Physics 2021, Fudan University) → Duke University (M.S. student)
- 13. Ziyu Ding (B.S. in Physics 2020, Fudan University) → LMU Munich (M.S. student)
- 14. Yuhui Lu (B.S. in Physics 2020, Fudan University) → University of Edinburgh (M.S. student)
- 15. Jelen Wong (B.S. in Physics 2020, Fudan University) → University of Chicago (M.S. student)
- 16. Honghui Liu (B.S. in Physics 2019, Fudan University) → Fudan University (Ph.D. student)
- 17. Jinli Yan (B.S. in Physics 2019, Fudan University) \rightarrow Georgia Tech (M.S. student)
- 18. Yunfeng Yan (B.S. in Physics 2019, Fudan University) → Columbia University (M.S. student)
- 19. Yuchan Yang (B.S. in Physics 2019, Fudan University) → Northwestern University (M.S. student)
- 20. Yu Yao (B.S. in Physics 2019, Fudan University) → University of Edinburgh (M.S. student)
- 21. Yuexin Zhang (B.S. in Physics 2019, Fudan University) → University of Groningen (Ph.D. student)
- 22. Zheng Cao (B.S. in Physics 2018, Fudan University) → University of Amsterdam (M.S. student)
- 23. Chenyang Qian (B.S. in Physics 2018, Fudan University) \rightarrow Industry
- 24. Jingyi Wang (B.S. in Physics 2018, Fudan University) \rightarrow MIT (Ph.D. student)
- 25. Jinye Yang (B.S. in Physics 2018, Fudan University) → University of Florida Gainesville (Ph.D. student)
- 26. Yueying Ni (B.S. in Physics 2017, Fudan University) \rightarrow Carnegie Mellon University (Ph.D. student)
- 27. Fangzheng Shi (B.S. in Physics 2017, Fudan University) → Nanjing University (Ph.D. student)
- 28. Menglei Zhou (B.S. in Physics 2017, Fudan University) → Fudan University (M.S. student)
- 29. Jiachen Jiang (B.S. in Physics 2016, Fudan University) → Cambridge University (Ph.D. student)
- 30. Qingling Ni (B.S. in Physics 2016, Fudan University) → Penn State University (Ph.D. student)
- 31. Muyun Liu (B.S. in Optical Information Science and Technology 2015, Fudan University) → Industry
- 32. Yue Liu (B.S. in Physics 2014, Fudan University) → Boston University (Ph.D. student)
- 33. Yiyang Zhang (B.S. in Physics 2014, Fudan University) → Washington University St. Louis (Ph.D. student)

Master Students (followed by the position found after the Master)

- 1. Rittick Roy (M.S. in Physics 2023, Fudan University) → University of Amsterdam (Ph.D. student)
- 2. Jiahao Tao (M.S. in Physics 2023, Fudan University) → Industry
- 3. Jiachen Zhu (M.S. in Physics 2021, Fudan University) \rightarrow Industry
- 4. Menglei Zhou (M.S. in Physics 2020, Fudan University) → University of Tübingen (Ph.D. student)
- 5. Alex Charlesworth^{*} (M.S. in Physics 2018, Nottingham University) → Industry
- 6. Marcus Garnham[⋆] (M.S. in Physics 2018, Nottingham University) → Industry
- 7. Yifan Cheng (M.S. in Physics 2016, Fudan University) → Industry
- 8. Jake Arthur[⋆] (M.S. in Physics 2015, Nottingham University) → Nottingham University (Ph.D. student)
- 9. Rachel Asquith^{*} (M.S. in Physics 2015, Nottingham University) → Nottingham University (Ph.D. student)
- 10. Dan Liu (M.S. in Physics 2015, Fudan University) \rightarrow Industry
 - * Co-supervision within the exchange program Fudan-Nottingham

Current Students

Kexin Huang (Fudan University)

Yimin Huang (Fudan University)

Olzhas Mukazhanov (Fudan University)

Doctoral Students (followed by the position found after the Ph.D.)

- 1. Swarnim Shashank (Ph.D. in Physics 2023, Fudan University) → Fudan University (postdoc)
- 2. Biao Zhou (Ph.D. in Physics 2022, Fudan University) \rightarrow High school teacher
- 3. Bakhtiyor Narzilloev (Ph.D. in Physics 2021, Fudan University) → UBAI Tashkent (researcher)
- 4. Shafqat Riaz (Ph.D. in Physics 2021, Fudan University) → Fudan University (postdoc)
- 5. Askar Abdikamalov (Ph.D. in Physics 2020, Fudan University) → Fudan University (postdoc)
- 6. Carlos A. Benavides-Gallego (Ph.D. in Physics 2020, Fudan University) → SHAO/CAS (postdoc)
- 8. Kishalay Choudhury (Ph.D. in Physics 2019, Fudan University) → IUCAA Pune (visiting researcher)
- 9. Ashutosh Tripathi (Ph.D. in Physics 2019, Fudan University) → Fudan University (postdoc)
- 10. Masoumeh Ghasemi-Nodehi (Ph.D. in Physics 2017, Fudan University) → NAOC/CAS (postdoc)
- 11. Guancheng Pei (Ph.D. in Physics 2016, Fudan University) → Industry
- 12. Zilong Li (Ph.D. in Physics 2015, Fudan University) \rightarrow Industry
- 13. Lingyao Kong (Ph.D. in Physics 2014, Fudan University) → Institute of Fluid Physics/CAEP (faculty)

Current Students

Debtroy Das (Fudan University)

Jiale Gu (Fudan University)

Songcheng Li (Fudan University)

Honghui Liu (Fudan University)

Gitika Mall (Fudan University)

Temurbek Mirzaev (Fudan University)

Zuobin Zhang (Fudan University)

Shuaitongze Zhao (Fudan University)

Postdoctoral Research Fellows (followed by the position found after the end of the contract)

- 1. Nitin Joshi (2023 Present, Fudan University)
- 2. Swarnim Shashank (2023 Present, Fudan University)
- 3. Shafqat Riaz (2021 2023, Fudan University) → University of Tübingen (postdoc)
- 4. Askar Abdikamalov (2020 Present, Fudan University) → New Uzbekistan University (faculty)
- 5. Ashutosh Tripathi (2019 2022, Fudan University) → XAO/CAS (faculty)
- 6. Dimitry Ayzenberg (2017 2020, Fudan University) → University of Tübingen (postdoc)
- 7. Ahmadjon Abdujabbarov (2017 2019, Fudan University) → National University of Uzbekistan (faculty)
- 8. Sourabh Nampalliwar (2015 2017, Fudan University) → University of Tübingen (postdoc)
- 9. Shangyu Sun (2015 2017, Fudan University) → SHAO/CAS (postdoc)
- 10. Yu Wang (2015 2017, Fudan University) → Shanghai Normal University (faculty)
- 11. Diego Rubiera-Garcia (2014 2015, Fudan University) \rightarrow Lisbon University (postdoc)
- 12. Naoki Tsukamoto (2013 2015, Fudan University) → HUST Wuhan (postdoc)
- 13. Daniele Malafarina (2013 2014, Fudan University) \rightarrow Nazarbayev University (faculty)

TEACHING EXPERIENCE

Introduction to Astrophysics

Course for undergraduate and graduate students of Physics, Fudan University (China) Fall 2023, Fall 2022, Spring 2021, Spring 2020, Spring 2019, Spring 2016

General Relativity

Course for undergraduate and graduate students of Physics, Fudan University (China) Spring 2023, Spring 2022, Spring 2020, Spring 2013

Introduction to Cosmology

Course for undergraduate and graduate students of Physics, Fudan University (China) Fall 2021, Spring 2018, Spring 2017, Spring 2016, Spring 2015, Spring 2014

Black Holes: A Laboratory for Testing Strong Gravity
Mini-course for students and researchers at Konrad Lorenz University (Colombia)
Fall 2019

Big Bang Nucleosynthesis as assistant of Prof. G. Fiorentini Course for undergraduate and graduate students of Physics, Ferrara University (Italy) Spring 2008, Spring 2007, Spring 2006

Classical Mechanics as assistant of Prof. F.L. Villante Course for undergraduate students of Computer Science, Ferrara University (Italy) Spring 2007, Spring 2006

PRESS COVERAGE (SELECTED)

- 1. How doomed matter reveals the inner secrets of black holes Astronomy (20 October 2021)
- 2. Scientist is in for the long run China Daily (14 September 2018)
- 3. Foreign scientists in Shanghai: the Italian astronomer Bambi (in Chinese) The Paper (4 July 2018)
- Why an Italian astrophysicist decided to move to Shanghai
 Nature Jobs Career Guide (17 January 2018); Nature 553, S31 (2018)
- 5. Nel cuore della Via Lattea c'é un tunnel spazio-temporale (in Italian) Rai News (31 May 2014)
- 6. Sagittarius A*: buco nero o wormhole (in Italian) Media INAF (29 May 2014)
- 7. Il buco nero al centro della galassia é un sentiero per un altro universo? (in Italian) Il Corriere della Sera (21 May 2014)
- 8. Black hole binge could test general relativity New Scientists (3 May 2013)
- 9. Burrowing black holes devoured first stars from within New Scientists (19 December 2008)
- 10. Milky Way's antimatter linked to exotic black holes New Scientists (22 January 2008)