

Contact Information

Relativistic Astrophysics at the Institute of Theoretical Physics

Goethe University, Frankfurt

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ORCID: [0000-0003-1364-3761](https://orcid.org/0000-0003-1364-3761)[Google Scholar](https://scholar.google.com/citations?user=tiny.cc/kota6_goolge86) (tiny.cc/kota6_goolge86)[SAO/NASA ADS](http://tiny.cc/kota6_ads68) (http://tiny.cc/kota6_ads68)**Education**

2018 March Ph.D. Astronomy, Kyoto University, Sakyo-ku, Kyoto, Japan

2015 March M.A. Astronomy, Kyoto University, Sakyo-ku, Kyoto, Japan

2013 March B.S. Physics, Osaka University, Toyonaka, Osaka, Japan

2009 March Sanda Gakuen High School, Hyogo, Japan

Professional History

2021 – Present Postdoctoral researcher, Goethe University Frankfurt, Institute of Theoretical Physics, Frankfurt am Main, Germany

2019 – 2021 Postdoctoral Associate, Massachusetts Institute of Technology Haystack Observatory, MA, USA

2019 – 2021 JSPS Overseas Research Fellow, Japan Society for the Promotion of Science (Host institution: Massachusetts Institute of Technology Haystack Observatory, MA, USA)

2018 – 2019 Research Fellow (DC2), Japan Society for the Promotion of Science (Host institution: National Astronomical Observatory of Japan, Iwate, Japan)

2017 – 2018 Research Fellow (DC2), Japan Society for the Promotion of Science (Host institution: Kyoto University, Kyoto, Japan)

Shorter Term Appointments

2019 July Visiting Scholar, Perimeter Institute for Theoretical Physics, Waterloo, Canada

2018 June – August Visiting Scholar, Massachusetts Institute of Technology Haystack Observatory, MA, USA

2018 March Visiting Scholar, Massachusetts Institute of Technology Haystack Observatory, MA, USA

2018 January Visiting Scholar, National Astronomical Observatory of Japan, Iwate, Japan

2015 August Visiting Scholar, National Astronomical Observatory of Japan, Tokyo, Japan

Grant History

2017 April – 2019 March
 Grant-in-Aid for JSPS Fellows,
 Japan Society of Promotion of Science, Japan
 PI: K. Moriyama, 1.6M Japanese Yen (\approx 15k USD)

Teaching/Mentoring Experiences

2022 June-August Mentor of the exercise course of Hydrodynamics and Magnetohydrodynamics
 Goethe University, Frankfurt

2019 June-August Mentor for Research Experience for Undergraduates (REU) Program
 Massachusetts Institute of Technology Haystack Observatory
 (1 undergraduate student)

2019 June Lecture for Research Experience for Undergraduates (REU) Program
 Massachusetts Institute of Technology Haystack Observatory

2018 Mentor for Research Experience for Undergraduates Program
 National Astronomical Observatory of Japan (1 undergraduate student)

Presentations at Conferences

Summary 24 talks and 2 poster + talks

24. 2022 August “Future Prospects for Constraining Black Hole Spacetime: Horizon-scale
 Variability of Astrophysical Jet”, IAUGA 2022, e-talk

23. 2022 June “Future Prospects for Constraining Black Hole Spacetime: Horizon-scale
 Variability of Astrophysical Jet”, Assembling the ngEHT: Community-Driven
 Science to a Global Instrument, Spain, talk

22. 2022 June “Imaging analysis and summary”, EHT 2022 Summer Collaboration Meeting,
 Granada, Spain, talk

20. 2021 December “Synthetic Data/Sgr A* Image”, EHT Collaboration Meeting 2021, web
 conference, talk

19. 2021 December "Measuring Black Hole Spin with Time-domain VLBI Observations of Infalling
 Gas Clouds", Physics and Astronomy World Forum, web conference, talk

18. 2021 July "Measuring Black Hole Spin with Time-domain VLBI Observations of Infalling
 Gas Clouds", 16th Marcel Grossmann meeting 2021, web conference, talk

17. 2021 February "Measurement of Black-Hole Spacetime with the Event Horizon Telescope:
 Theory of Radiative Echoes and VLBI Observations", next generation EHT
 meeting 2021, 2021, web conference, talk

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16. 2021 January "Direct Measurement of Black Hole Spin: Theory of Infalling Gas Clouds and VLBI Observational Approaches", 237th American Astronomical Society Meeting, 2021, web conference, talk
 15. 2020 December "Sgr A* imaging: Synthetic data for SgrA*", EHT Collaboration Meeting 2020, web conference, plenary talk
 14. 2020 December "RML Methods for Sgr A* Imaging and Variability Extraction", EHT Collaboration Meeting 2020, web conference, plenary talk
 13. 2020 December "Measurement of Black Hole Spin with the Event Horizon Telescope: radiative echoes with 3D-GRMHD simulations", EHT Collaboration Meeting 2020, web conference, contributed talk
 12. 2020 November "Measurement of Black Hole Spin with the Event Horizon Telescope Theory of Radiative Echoes and VLBI Observational Approaches", 5th Annual Northeast Radio Observatory Corporation Symposium, Massachusetts Institute of technology Haystack Observatory, MA , USA poster + short talk
 11. 2020 September "Measureing Black Hole Spin with TIme-domain VLBI Observations of Infalling gas clouds", Annual Conference of the Astronomical Society of Japan, web conference, talk
 10. 2020 May "Sgr A* imaging: status of the synthetic data generation", Imaging Workshop 2020 of Event Horizon Telescope Collaboration, web conference, organization and plenary talk
 9. 2020 February "Measuring Black Hole Spin with Time-domain VLBI Observations of Infalling Gas Clouds", East-Asian ALMA Science Workshop 2019, web conference, talk
 8. 2020 January "Measuring Black Hole Spin with Time-domain VLBI Observations of Infalling Gas Clouds", Space VLBI 2020 Science and Technology Futures, Virginia, USA, talk
 7. 2019 December Echoes and spin, EHT Collaboration Meeting 2019, Naniloa Hotel, Hilo, USA, talk
 6. 2019 December "Parameter survey for SMILI team", EHT Collaboration Meeting 2019, Naniloa Hotel, Hilo, USA, talk
 5. 2019 November "Black hole Spin Measurement Based on Time-domain VLBI Observations of Infalling Gas Cloud", 4th Annual Northeast Radio Observatory Corporation Symposium, Massachusetts Institute of technology Haystack Observatory, MA , USA, talk
 4. 2019 December "Measureing Black Hole Spin with TIme-domain VLBI Observations of Infalling gas clouds", 32th Rironkon Symposium, National Astronomical Observatory of Japan, Tokyo, Japan, talk

3. 2019 September "Horizon Scale Imaging of M87* Based on Event Horizon Telescope: Detail of Analysis and Future prospect"s, Annual Conference of the Physical Society of Japan, Yamagata University, Yamagata, Japan, plenary talk
2. 2019 September "Measureing Black Hole Spin with TIme-domain VLBI Observations of Infalling gas clouds", Annual Conference of the Astronomical Society of Japan, Kumamoto University, Kumamoto, Japan, talk
1. 2019 May "Black hole Spin Measurement Based on Time-domain VLBI Observations of Infalling Gas Cloud", New England Regional Quasar and AGN Meeting, Massachusetts Institute of Technology, MA , USA, talk

Colloquium Talks

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| 2022 August | Tsukuba University, Japan |
| 2022 June | Kyoto Sangyo University, web colloquium |
| 2022 May | National Astronomical Observatory of Japan, web colloquium |
| 2022 May | Kyoto University, Kyoto, Japan |
| 2019 December | Osaka University, Osaka, Japan |
| 2018 August | Harvard University, Black Hole Initiative, MA, USA |
| 2018 June | Harvard & Smithonian Center for Astrophysics, MA, USA |
| 2018 March | Massachusetts Institute of Technology Haystack Observatory, MA, USA |
| 2017 November | National Astronomical Observatory of Japan, Iwate, Japan |
| 2017 August | National Astronomical Observatory of Japan, Iwate, Japan |
| 2017 May | Tokyo Metropolitan University, Tokyo, Japan |
| 2015 August | National Astronomical Observatory of Japan, Iwate, Japan |

Press release, Public talk, interview, and scientific magazine

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| 2022 June | Public interview and news, NIPPON HOSO KYOKAI, Japan |
| 2022 May | Press release in Japan for EHT Collaboration project about "Astronomers Reveal First Image of the Black Hole at the Heart of Our Galaxy" |
| 2019 June | Public Talk, Boston Japanese Researchers Forum, Massachusetts Institute of Technology, MA, USA |

Commentary Articles (popular magazines)

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| 2022 August | Astronomical monthly report (Japanese science magazine) |
| 2022 August | Newton science magazine (Japanese science magazine) |
| 2022 August | Published the Nikkei Science magazine (Japanese science magazine) |

Awarded Computational Resources

- 2021 February "Direct measurement of black hole spacetime: general relativistic magnetohydro dynamics simulation of infalling gas clouds and VLBI observation", Cray XC50-B, 1 year, Center for Computational Astrophysics of National Astronomical Observatory of Japan
- 2020 February "Direct measurement of black hole spacetime: general relativistic magnetohydro dynamics simulation of infalling gas clouds and VLBI observation", Cray XC50-B, 1 year, Center for Computational Astrophysics of National Astronomical Observatory of Japan
- 2019 February "Direct measurement of black hole spacetime: general relativistic magnetohydro dynamics simulation of infalling gas clouds and VLBI observation", Cray XC50-B, 1 year, Center for Computational Astrophysics of National Astronomical Observatory of Japan

Honor and Awards

- 2021 January 8 2021 Group Award, Royal Astronomical Society, UK
- 2020 March 12 The Nelson P. Jackson Aerospace Award
- 2020 January 28 AAS Bruno Rossi Prize 2020
- 2019 December 27 Einstein Medal 2020
- 2019 November 19 Smithsonian American Ingenuity Award 2019 (Physical Sciences)
- 2019 September 5 The 2020 Breakthrough Prize for the Fundamental Physics
- 2019 May 9 NSF Diamond Achievement Award, National Science Foundation
(Received as a member of the Event Horizon Telescope Collaboration)

Editorial Service

Referee for Peer-reviewed Journals: Astronomy & Astrophysics and Universe

Professional Society and Research Collaboration

Professional society: Astronomical Society of Japan

Research Collaboration: Event Horizon Telescope Collaboration

Service work of Event Horizon Telescope Collaboration:

- Leading member of team SMILI and synthetic data generation of Imaging working group
- Active member of Model Comparison & Feature Extraction, Multiwavelength, Scattering, and Time

Domain working groups