Shiro Ikeda

Curriculum Vitae

Personal Details

Gender: Male
Date of birth: 21/December/1968
Place of birth: Tokyo, Japan
Language: Japanese and English
Citizenship: Japan

Current Position

2016.04 – **Professor**, *The Institute of Statistical Mathematics*, Tokyo, Japan.
2016.04 – **Professor**, *Statistical Science Program, The Graduate University of Advanced Studies (SOKENDAI)*, Tokyo, Japan.
2017.04 – **Visiting Professor**, *National Astronomical Observatory of Japan*, Tokyo, Japan.
2016.05 – **Visiting Senior Scientist**, *Kavli IPMU, The University of Tokyo*, Chiba, Japan.

Past Academic Positions

2003.02 – 2016.03 **Associate Professor**, *The Institute of Statistical Mathematics*, Tokyo, Japan.
2001.04 – 2003.02 **Associate Professor**, *Dept. of Brain Science and Eng., Kyushu Institute of Technology*, Fukuoka, Japan.
1998.10 – 2001.03 **Researcher**, *"Information and Human Activity," PRESTO, JST*, Saitama, Japan.
1996.04 – 1998.09 **Special Postdoctoral Researcher**, *RIKEN*, Saitama, Japan.
1996.01 – 1996.03 **Research Fellow**, *JSPS (PD)*, Tokyo, Japan.

Visiting Positions

2024.06 **Visiting Academic**, *GIPSA-Lab*, Grenoble, France.
2022.05 – 2022.07 **Theoretical Science Visiting Program**, *OIST*, Okinawa, Japan.
2010.04 – 2016.03 **Adjunct Associate Professor**, *Tokyo Institute of Technology*, Kanagawa, Japan.

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2008.04 – 2008.10 **Visiting Academic**, *The University of Melbourne*, Melbourne, Victoria, Australia.

2007.10 – 2008.04 **Visiting Academic**, *Australian National University*, Camberra, ACT, Australia.

2004.04 – 2006.03 **Visiting Researcher**, *RIKEN*, Saitama, Japan.

2003.04 – 2004.03 **Visiting Academic**, *Gatsby Computational Neuroscience Unit, UCL*, London, UK, under the fellowship between JSPS and Royal Society.

Education

1993.04 – 1996.03 **Doctor of Engineering**, *The University of Tokyo*, Tokyo, Japan.

Major Mathematical Engineering and Information Physics

Thesis Title Estimating the structure of the sources

Supervisor Professor Kaoru Nakano

1991.04 – 1993.03 **Master of Engineering**, *The University of Tokyo*, Tokyo, Japan.

Major Mathematical Engineering and Information Physics

Thesis Title Construct the structure of Hidden Markov Models

Supervisor Associate Professor Kaoru Nakano

1987.04 – 1991.03 **Bachelor of Engineering**, *The University of Tokyo*, Tokyo, Japan.

Major Mathematical Engineering and Information Physics

Academic Honors and Awards

2021.01 **Royal Astronomical Society 2021 Group Achievement Award**,
Recipients: The Event Horizon Telescope (EHT) Collaboration.

2020.05 **2020 Einstein Medal**,
Recipients: The EHT Collaboration.

2019.09 **2020 Breakthrough Prize in Fundamental Physics**,
Recipients: The EHT Collaboration.

2019.05 **National Science Foundation Diamond Achievement Award**,
Recipients: The EHT Collaboration.

2001.09 **Japan Neural Network Society Best Paper Award**,
S. Ikeda and K. Toyama "Independent component analysis for noisy data–MEG data analysis," Neural Networks, 13(10), 2000.

Invited Talks (talks in English)

2025.06.06 **The imaging of the supermassive black hole shadows with EHT**, *International Symposium on Computational Sensing 2025*, Hotel Koener, Clervaux, Luxembourg.

2024.06.13 **The imaging process of the blackhole shadow with EHT**, *Ricochet days in Lille*, Lille University, France.

2024.03.05 **Astronomy and data science**, *International Workshop KEK-Cosmo 2024*, KEK, Tsukuba, Ibaragi, Japan.

2024.01.09 **Data science for astronomy**, *Machine Learning at High Energy Physics workshop*, KEK, Tsukuba, Ibaragi, Japan.

2023.07.14 **Imaging of ALMA telescope with self-calibration**, *EAS 2034*, Kraków, Poland.

2023.06.21 **Data science and imaging the black hole shadows**, *RIKEN AIP seminar*, RIKEN center for AIP, Tokyo, Japan.

2023.03.03 **Astronomy and data science: Building astronomical claims with modern data science**, *Interdisciplinary Science Conference in Okinawa (ISCO 2023) Physics and Mathematics meet Medical Science* , OIST, Okinawa, Japan.

2022.09.13 **Data science and imaging the black hole shadow**, *International online IAU-IAA Astrostats and Astroinfo seminar*, online.

2022.02.08 **Toward astro data science**, *Galaxy Evolution Workshop 2021*, NAOJ, Tkyo, Japan.

2020.02.20 **Imaging supermassive blackhole with the Event Horizon Telescope**, *The 21th Interdisciplinary Exchange Evening*, RIKEN, Saitama, Japan.

2019.10.16 **Data science and astronomy: how it worked for blackhole shadow imaging**, *The cosmos at high energies: exploring extreme physics through novel instrumentation*, Kavli IPMU, Chiba, Japan.

2018.09.28 **Optimization theory and astronomy**, *3rd IMI-ISM-ZIB MODAL Workshop on Challenges in Real World Data Analytics and High-Performance Optimization*, GRIPS, Tokyo, Japan.

2018.01.11 **Statistical signal processing for astronomy**, *Kavli IPMU-Berkeley Symposium Statistics, Physics and Astronomy*, Kavli IPMU, Chiba, Japan.

2017.06.05 **Data scientific approach for astronomy**, *The Third Joint Symposium of Osaka CTSR, RIKEN iTHES/iTHEMS, Kavli IPMU,"Deep Learning and Physics"*, Osaka Univ., Osaka, Japan.

2016.06.17 **Cosmological parameter estimation and Fisher information matrix**, *IGAIA IV (Information Geometry and its Applications)*, Liblice, Czech Republic.

2016.05.31 **Event vlassification**, *PhyStat-ν Workshop on Statistical Issues in Experimental Neutrino Physics*, Kavli IPMU, Chiba, Japan.

2015.12.15 **Sparse modeling for astronomical data analysis**, *International Meeting on "High-Dimensional Data Driven Science" (HD3-2015)*, Mielparque-Kyoto, Kyoto, Japan.

2015.09.25 **Sparsity and information processing**, *MEIS2015 : Mathematical Progress in Expressive Image Synthesis*, Kyushu Univ., Fukuoka, Japan.

2014.04.11 **Optimization of probability measures and information geometry**, *2nd International Workshop on Information Geometry and Affine Differential Geometry*, Shanghai, China.

2013.08.28 **Optimization of probability measure and its applications in information theory**, *WITMSE2013*, Univ. of Tokyo, Tokyo, Japan.

2010.09.23 **Channel capacity problem and optimization of probability measure**, *Mathematical Sciences and Their Applications*, Nagano, Japan.

2010.08.03 **Channel capacity and the predictive distribution**, *Information Geometry and its Applications III*, Leipzig, Germany.

2009.08.31 **Mean field approximation methods and information geometry**, *Physics of Algorithms '09*, Santa Fe, USA.

Grants

2024 – 2029 JSPS Kakenhi, Grant-in-Aid for Specially Promoted Research, 24H00004

Formation Processes of Heavy Elements in the Early Universe Elucidated by Superconducting Nanoelectronics, Large-Scale Numerical Simulations, and Data Science

Co-Investigator (PI: Kotaro Kohno)

2023 – 2030 JSPS Kakenhi, International Leading Research, 23K20035

Formation Processes of Heavy Elements in the Early Universe Elucidated by Superconducting Nanoelectronics, Large-Scale Numerical Simulations, and Data Science

Co-Investigator (PI: Kotaro Kohno)

2020 – 2023 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 20H01951

New imaging method for ALMA with sparse modeling

Principal Investigator

2020 – 2022 JST, AIP Acceleration Research

Cosmology with big astronomical data using innovative image analysis methods

Co-Investigator (PI: Naoki Yoshida)

2019 – 2024 JSPS Kakenhi, Fund for the Promotion of Joint International Research (B), 19KK0081

Exploring dynamic pictures of supermassive black holes with movie reconstruction from event-horizon-scale observations

Co-Investigator (PI: Mareki Honma)

2017 – 2020 JSPS Kakenhi, Grant-in-Aid for Scientific Research (A), 17H01116

Development of commensal FRB search engine for VERA and observational studies of transient sources

Co-Investigator (PI: Mareki Honma)

2014 – 2019 JST, CREST, Research Area, "Big Data"

Statistical Computational Cosmology with Big Astronomical Imaging Data

Co-Investigator (PI: Naoki Yoshida)

2013 – 2017 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Innovative Areas, "Initiative for High-Dimensional Data-Driven Science through Deepening of Sparse Modeling," 25120008

Approach to sparse modeling based on compressed sensing planned

Co-Investigator (PI: Toshiyuki Tanaka)

2013 – 2015 MIC, SCOPE

Research and development of a small-degree-of-freedom interface for multi-degree-of-freedom remote-robot control

Co-Investigator (PI: Jun Morimoto)

2012 – 2014 JSPS Kakenhi, Grant-in-Aid for Scientific Research (C), 24560490

Communication channel capacity and optimization of probability measure

Principal-Investigator

2010 – 2013 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 22300098

Mathematical foundation of efficient algorithms for statistical inference

Co-Investigator (PI: Kenji Fukumizu)

2009 – 2012 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 21300092

Extraction of synergetic structure of whole body movements and its application to human assisting system

Co-Investigator (PI: Yutaka Sakaguchi)

2007 – 2009 JSPS Kakenhi, Grant-in-Aid for Scientific Research (C), 19500249

Geometric Study on Statistical Learning and Computation based on Graphs

Co-Investigator (PI: Kenji Fukumizu)

2006 – 2009 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, "Deepening and Expansion of Statistical Mechanical Informatics," 18079013

Theoretical analysis and information engineering application of approximate inference methods

Principal-Investigator

2004 – 2006 JSPS Kakenhi, Grant-in-Aid for Young Scientists (B), 16700227

Information geometrical analysis of the cluster variational method

Principal-Investigator

2004 – 2007 JSPS Kakenhi, Grant-in-Aid for Scientific Research (B), 16300088

New statistical methodology for genome diversity analysis

Co-Investigator (PI: Shinto Eguchi)

2003 – 2005 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, "Statistical-Mechanical Approach to Probabilistic Information Processing," 14084208

Analysis of Belief Propagation algorithms based on Information Geometry

Co-Investigator (PI: Yoichi Motomura)

2002 MEXT Kakenhi, Grant-in-Aid for Scientific Research on Priority Areas, "Statistical-Mechanical Approach to Probabilistic Information Processing," 14084208

Analysis of Belief Propagation algorithms based on Information Geometry

Principal-Investigator

1998 – 2001 JST, PRESTO

Mathematical analysis of the EM algorithm and its applications in engineering

Principal-Investigator

Teaching

Cources

2020, 2022, 2024 **Introduction to Computational Inference**, *Department of Statistical Science, GUAS*, 4 classes, Japanese.

2022 **Special Lecture on Radio Astronomy I**, *Astronomical Institute, Tohoku University*, Intensive course, Japanese.

2021 **Observational Astronomy, Advanced Course II**, *Department of Astronomy, The University of Tokyo*, Intensive course, Japanese.

2020 **Special Lecture on Astronomy IX**, *Department of Astronomical Science, SOKENDAI*, Intensive course, English.

2020 **Special Lectures on Mathematical Engineering and Instrumentation Physics**, *Department of Mathematical Engineering and Instrumentation Physics, The University of Tokyo*, 1 class, Japanese.

2018 **Interstellar Physics Special Lecture**, *Department of Physics, Nagoya University*, Intensive course, Japanese.

2018 **Lecture Series of Data Science in Physics**, *Graduate School of Arts and Science, The University of Tokyo*, Intensive course, Japanese.

2017 **Lecture Series of Data Science in Astronomy**, *Graduate School of Science, The University of Tokyo*, Intensive course, Japanese.

2011, 2012, 2013, 2015 **Advanced Topics in Mathematical Information Sciences II**, *Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology*, 2 classes, English.

2012, 2013 **Compressed sensing: Theory and Applications**, *Department of Informatics, Kyushu University*, Intensive course, Japanese.

2005 **Lecture Series of Computational Mathematics 1**, *Graduate School of Information Science, Nagoya University*, Intensive course, Japanese.

2001, 2002 **Brain Style Pattern Recognition**, *Department of Brain Science and Engineering, Kyushu Institute of Technology*, Regular course, Japanese.

Ph.D Students

Supervise Yuichi Shiraishi (Graduate University of Advanced Studies)

Masatoshi Hamada (Graduate University of Advanced Studies)

Co-supervise Shota Takahashi (Graduate University of Advanced Studies)

Jin Zou (Graduate University of Advanced Studies)

Yusuke Watanabe (Graduate University of Advanced Studies)

Academic Service

International Conference

2025.03 **Scientific Organizing Committee**, *Study of the Universe By Line Intensity Mapping Experiments (SUBLIME 2025)*, Tokyo, Japan.

2025.03 **Organizing Committee**, *Further Developments of Information Geometry 2025*, Tokyo, Japan.

2024.10 **Scientific Organizing Committee**, *Data Oriented Astronomy*, Tokyo, Japan.

2006.03 **International Program Committee**, *6th International Symposium on Independent Component Analysis and Blind Source Separation*, Charleston, USA.

2005.12 **Local Organizing Committee**, *2nd International Symposium on Information Geometry and its Applications*, Tokyo, Japan.

2004.10 **Technical Committee**, *ISCA Tutorial and Research Workshop on Statistical and Perceptual Audio Processing*, Jeju, Korea.

2003.04 **International Program Committee**, *4th International Symposium on Independent Component Analysis and Blind Source Separation*, Nara, Japan.

Domestic Conference

2023.03 **Organizer**, *Approaches for Inverse Problems*, Tachikawa, Tokyo.

2022.10 **Organizer**, *Data Scientific Methods in Astronomy*, Tachikawa, Tokyo.

2019.05 **Organizer**, *Data Scientific Methods in Astronomy*, Tachikawa, Tokyo.

2017.06 **Organizer**, *Workshop on Minkowski functionals* , Kashiwa, Chiba.

2017.05 **Organizer**, *Data Scientific Methods in Astronomy*, Tachikawa, Tokyo.

2015.05 **Organizer**, *Statistical Methods and Astronomy*, Tachikawa, Tokyo.

2014.12 **Organizer**, *Information Geometry for Machine Learning*, Wako, Saitama.

2014.03 **Organizer**, *Towards Foundation of Statistical Methods for Medical Image Processing*, ISM Research Collaboration, Tachikawa, Tokyo.

2013.03 **Organizer**, *Optimization of Probability Measure and Communication Channel Capacity*, ISM Research Collaboration, Tachikawa, Tokyo.

Editorial Board

2025 **Special Issue Managing Editor**, *Information Geometry*, Springer, Special issue on "2025 Further Developments of Information Geometry".

2018 – **Associate editor**, *Information Geometry*, Springer.

2008 – 2017 **Associate editor**, *Annals of the Institute of Statistical Mathematics*, Springer.

2007 **Editor of featured section**, *Special Issue: Information Geometry and Its Applications, Annals of the Institute of Statistical Mathematics, Vol.59. No.1*, Springer.

2006 – 2013 **Editor**, *Neural Networks*, Elsevier.

2005 – 2014 **Associate editor**, *IEEE transactions on Neural Networks and Learning Systems*.

2005 – 2008 **Co-editor**, *Annals of the Institute of Statistical Mathematics*, Springer.

Journal Reviews

IEEE transactions (Biological Engineering, Communications, Information Theory, Neural Networks, and, Signal and Audio Procession), IEEE Proceedings, Neurocomputing, IEICE transactions, Signal Processing, Neural Networks, Physical review research, Publications of the Astronomical Society of Japan, Astronomy & Astrophysics, The Astronomical Journal, Journal of the Royal Statistical Society B, Monthly Notices of the Royal Astronomical Society, Information geometry, Entropy, Journal of Machine Learning Research, Nature Methods

Conference Reviews

Artificial Intelligence and Statistics, Neural Information Processing Systems (NIPS) (1999–2015), International Conference on Machine Learning (ICML) (2007), Series of ICA (Independent Component Analysis and Blind Source Separation) conferences, IEEE International Symposium on Information Theory (ISIT), IEEE Information Theory Workshop (ITW), IEEE International Joint Conference on Neural Networks (IJCNN), International Conference on Artificial Neural Networks, International Conference on Neural Information Processing (ICONIP 2025)

Administrative Committee

2019 – 2022 **Committee Member**, *Science Advisory Committee*, National Astronomical Observatory of Japan.

2015 – 2016 **Examination Committee Member**, *Special Research Fellowship for Young Scientists*, Japan Society for Promotion of Science.

2014 – 2015 **Committee Member**, *Technical Committee on Information Theory*, The Institute of Electronics, Information and Communication Engineering.

Publications

Articles in journals

[1] J. P. Pedroso and S. Ikeda. "Maximum-expectation matching under recourse". In: *European Journal of Operational Research* (Feb. 2025). DOI: 10.1016/j.ejor.2025.02.012. arXiv: 1605.08616 [cs.DS].

[2] M. Uemura, Y. Koga, R. Sazaki, T. Yukino, T. Nakaoka, R. Imazawa, T. Kato, et al. "Smart Kanata: A Framework for Autonomous Decision Making in Rapid Follow-up Observations of Cataclysmic Variables". In: *Publications of the Astronomical Society of Japan* (Feb. 2025). 14th/14 authors. DOI: 10.1093/pasj/psae112. arXiv: 2412.02092 [astro-ph.SR].

[3] S. Ikeda, T. Nakazato, T. Tsukagoshi, T. T. Takeuchi, and M. Yamaguchi. "Solving Self-calibration of ALMA Data with an Optimization Method". In: *Publications of the Astronomical Society of Japan* (Feb. 2025). DOI: 10.1093/pasj/psae114. arXiv: 2412.03183 [astro-ph.IM].

[4] A. W. Raymond, S. S. Doeleman, K. Asada, L. Blackburn, G. C. Bower, M. Bremer, D. Broguiere, et al. "First Very Long Baseline Interferometry Detections at 870 μm". In: *The*

Astronomical Journal 168.3 (Aug. 2024). (39 leading authors and 240 EHT collaboration members including S.I.), p. 130. DOI: 10.3847/1538-3881/ad5bdb.

[5] M. Shirasaki and S. Ikeda. "Neural style transfer of weak lensing mass maps". In: *The Open Journal of Astrophysics* 7 (May 2024). DOI: 10.33232/001c.118104. arXiv: 2310.17141 [astro-ph.CO].

[6] M. Yamaguchi, T. Muto, T. Tsukagoshi, H. Nomura, N. Hirano, T. Nakazato, S. Ikeda, et al. "ALMA 2D Super-resolution Imaging of Taurus-Auriga Protoplanetary Disks: Probing Statistical Properties of Disk Substructures". In: *Publications of the Astronomical Society of Japan* 76.3 (May 2024). (7th/9 authors), pp. 437–474. DOI: 10.1093/pasj/psae022. arXiv: 2404.13570 [astro-ph.EP].

[7] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. VII. Polarization of the Ring". In: *The Astrophysical Journal Letters* 964.2 (Mar. 2024). (285 authors in alphabetical order), L25(32pp). DOI: 10.3847/2041-8213/ad2df0.

[8] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. VIII. Physical Interpretation of the Polarized Ring". In: *The Astrophysical Journal Letters* 964.2 (Mar. 2024). (286 authors in alphabetical order), L26(37pp). DOI: 10.3847/2041-8213/ad2df1.

[9] The Event Horizon Telescope Collaboration. "The persistent shadow of the supermassive black hole of M87, I. Observations, calibration, imaging, and analysis". In: *Astronomy & Astrophysics* 681 (Jan. 2024). (309 authors in alphabetical order), A79(63pp). DOI: 10.1051/0004-6361/202347932.

[10] The Event Horizon Telescope Collaboration. "First M87 Event Horizon Telescope Results. IX. Detection of Near-horizon Circular Polarization". In: *The Astrophysical Journal Letters* 957.2 (Nov. 2023). (283 authors in alphabetical order), L20(42pp). DOI: 10.3847/2041-8213/acff70. arXiv: 2205.06460 [astro-ph.HE].

[11] B. S. Prather, J. Dexter, M. Moscibrodzka, H.-Y. Pu, T. Bronzwaer, J. Davelaar, Z. Younsi, et al. "Comparison of Polarized Radiative Transfer Codes Used by the EHT Collaboration". In: *The Astrophysical Journal* 950.1 (June 2023). (10 leading authors and 263 EHT collaboration members including S.I.), 35(23pp). DOI: 10.3847/1538-4357/acc586.

[12] S. Takahashi, M. Tanaka, and S. Ikeda. "Blind Deconvolution with Non-smooth Regularization via Bregman Proximal DCAs". In: *Signal Processing* 202 (Jan. 2023), p. 108734. DOI: 10.1016/j.sigpro.2022.108734. arXiv: 2205.06460 [math.OC].

[13] S. Issaoun, M. Wielgus, S. Jorstad, T. P. Krichbaum, L. Blackburn, M. Janssen, C.-k. Chan, et al. "Resolving the Inner Parsec of the Blazar J1924–2914 with the Event Horizon Telescope". In: *The Astrophysical Journal* 934.2 (Aug. 2022). (29 leading authors and 239 EHT collaboration members including S.I.), 145(21pp). DOI: 10.3847/1538-4357/ac7a40.

[14] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (388 authors in alphabetical order), L12(21pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6674. arXiv: 2311.08680.

[15] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (336 authors in alphabetical order), L13(31pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6675. arXiv: 2311.08679.

[16] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (270 authors in alphabetical order), L14(64pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6429. arXiv: 2311.09479.

[17] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (269 authors in alphabetical order), L15(52pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6736. arXiv: 2311.08697.

[18] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. V. Testing Astrophysical Models of the Galactic Center Black Hole". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (274 authors in alphabetical order), L16(49pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6672. arXiv: 2311.09478.

[19] The Event Horizon Telescope Collaboration. "First Sagittarius A* Event Horizon Telescope Results. VI. Testing the Black Hole Metric". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (270 authors in alphabetical order), L17(44pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6756. arXiv: 2311.09484.

[20] J. Farah, P. Galison, K. Akiyama, K. L. Bouman, G. C. Bower, A. Chael, A. Fuentes, et al. "Selective Dynamical Imaging of Interferometric Data". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (18 leading authors and 216 EHT collaboration members including S.I.), L18(21pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6615.

[21] M. Wielgus, N. Marchili, I. Martí-Vidal, G. K. Keating, V. Ramakrishnan, P. Tiede, E. Fomalont, et al. "Millimeter Light Curves of Sagittarius A* Observed during the 2017 Event Horizon Telescope Campaign". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (31 leading authors and 236 EHT collaboration members include S.I.), L19(32pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6428.

[22] B. Georgiev, D. W. Pesce, A. E. Broderick, G. N. Wong, V. Dhruv, M. Wielgus, C. F. Gammie, et al. "A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (30 leading authors and 239 EHT collaboration members including S.I.), L20(32pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac65eb.

[23] A. E. Broderick, R. Gold, B. Georgiev, D. W. Pesce, P. Tiede, C. Ni, K. Moriyama, et al. "Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI". In: *The Astrophysical Journal Letters* 930.2 (May 2022). (7 leading authors and 260 EHT collaboration members including S.I.), L21(30pp). ISSN: 2041-8205. DOI: 10.3847/2041-8213/ac6584.

[24] K. Satapathy, D. Psaltis, F. Özel, L. Medeiros, S. T. Dougall, C.-K. Chan, M. Wielgus, et al. "The Variability of the Black Hole Image in M87 at the Dynamical Timescale". In: *The Astrophysical Journal* 925.1 (Jan. 2022). (10 leading authors and 228 EHT collaboration members including S.I.), p. 13. DOI: 10.3847/1538-4357/ac332e. arXiv: 2111.01317 [astro-ph.HE].

[25] M. Yamaguchi, T. Tsukagoshi, T. Muto, H. Nomura, T. Nakazato, S. Ikeda, M. Tamura, and R. Kawabe. "ALMA Super-resolution Imaging of T Tau: $r = 12$ au Gap in the Compact Dust Disk around T Tau N". In: *The Astrophysical Journal* 923.1 (Dec. 2021), p. 121. DOI: 10.3847/1538-4357/ac2bfd. arXiv: 2110.00974 [astro-ph.EP].

[26] A. Taniguchi, Y. Tamura, S. Ikeda, T. Takekoshi, and R. Kawabe. "A Data-scientific Noise-removal Method for Efficient Submillimeter Spectroscopy With Single-dish Telescopes". In: *The Astronomical Journal* 162.3 (Aug. 2021), p. 111. DOI: 10.3847/1538-3881/ac11f7. arXiv: 2107.06290 [astro-ph.IM].

[27] X. Li, N. Yoshida, M. Oguri, S. Ikeda, and W. Luo. "Three-dimensional Reconstruction of Weak-lensing Mass Maps with a Sparsity Prior. I. Cluster Detection". In: *The Astrophysical Journal* 916.2 (July 2021), p. 67. DOI: 10.3847/1538-4357/ac0625. arXiv: 2102.09707 [astro-ph.CO].

[28] M. Janssen, H. Falcke, M. Kadler, E. Ros, M. Wielgus, K. Akiyama, M. Balokovi, et al. "Event Horizon Telescope observations of the jet launching and collimation in Centaurus A". In: *Nature Astronomy* 5 (July 2021). (35 leading authors and 236 EHT collaboration members including S.I.), pp. 1017–1028. DOI: 10.1038/s41550-021-01417-w.

[29] P. Kocherlakota, L. Rezzolla, H. Falcke, C. M. Fromm, M. Kramer, Y. Mizuno, A. Nathanail, et al. "Constraints on black-hole charges with the 2017 EHT observations of M87*". In: *Physical Review D* 103 (10 May 2021). (9 leading authors and 227 EHT collaboration members including S.I.), p. 104047. DOI: 10.1103/PhysRevD.103.104047.

[30] T. Omama, M. Uemura, S. Ikeda, and M. Morii. "Extracting common signal components from the X-ray and optical light curves of GX 339-4: new view for anti-correlation". In: *Publications of the Astronomical Society of Japan* 73.3 (Apr. 2021), pp. 716–727. DOI: 10.1093/pasj/psab032. arXiv: 2104.07338 [astro-ph.HE].

[31] M. Shirasaki, K. Moriwaki, T. Oogi, N. Yoshida, S. Ikeda, and T. Nishimichi. "Noise reduction for weak lensing mass mapping: An application of generative adversarial networks to Subaru Hyper Suprime-Cam first-year data". In: *Monthly Notices of the Royal Astronomical Society* (Apr. 2021), stab982. DOI: 10.1093/mnras/stab982. arXiv: 1911.12890 [astro-ph.CO].

[32] The Event Horizon Telescope Collaboration. "First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon". In: *The Astrophysical Journal Letters* 910.1 (Mar. 2021). (240 authors in alphabetical order), L13(43pp). DOI: 10.3847/2041-8213/abe4de. arXiv: 2105.01173 [astro-ph.HE].

[33] The Event Horizon Telescope Collaboration. "First M87 Event Horizon Telescope Results. VII. Polarization of the Ring". In: *The Astrophysical Journal Letters* 910.1 (Mar. 2021). (239 authors in alphabetical order), L12(48pp). DOI: 10.3847/2041-8213/abe71d. arXiv: 2105.01169 [astro-ph.HE].

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