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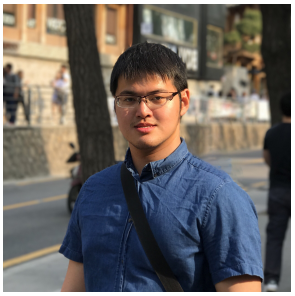

Education

2018 – now **The University of Tokyo**, Tokyo, Japan
Ph.D. Department of Physics, Graduate School of Science **(GPA:4.00/4.00)**
Institute for Cosmic Ray Research (ICRR)
Supervisor: Hideyuki Tagoshi
Research topic: Data analysis, Time-frequency analysis, Machine learning

2016 – 2018 **The University of Tokyo**, Tokyo, Japan
M.S. Department of Physics, Graduate School of Science **(GPA:3.82/4.00)**
Institute for Cosmic Ray Research (ICRR)
Supervisor: Takaaki Kajita
Thesis title: *Development and characterization of KAGRA Photon Calibrator for the accurate calibration of gravitational wave signals*

2012 – 2016 **National Chiao-Tung University (NCTU)**, Hsinchu, Taiwan
B.S., Department of Electrophysics **(GPA:4.15/4.30) (Major GPA:4.23/4.30), ranked 1st in class of 30**
Supervisor: Guey-Lin Lin

Projects

2018 – 2020 **Analysis of Gravitational Wave signals from Core-Collapse Supernovae with Non-Harmonic Analysis**
➥ Non-Harmonic Analysis (NHA) is a time-frequency analysis method which is able to achieve both high temporal and frequency resolution. I analyzed the gravitational wave signals from core-collapse supernovae with NHA and observed the gravitational waves from different oscillation modes of protoneutron star with precise frequencies and amplitudes.

2016 – 2018 **Development and Characterization of KAGRA Photon Calibrator**
➥ KAGRA is a Large-scale Cryogenic Gravitational Wave Telescope which is located in Gifu, Japan. I have been involved in KAGRA project since 2016. I built an auxiliary laser system so-called Photon calibrator in KEK (Tsukuba) and KAGRA-site (Kamioka), characterized the laser beam path and beam profile, and stabilized the laser noise until -130 dB/rtHz by using active feedback control.

Awards and Achievements

2020 **Best Poster Award**, 25th KAGRA Face-to-Face meeting, KAGRA
2016-2021 **Global Science Graduate Course Scholarship**, The University of Tokyo
2016 **Outstanding Exchange Student Scholarship Scholarship**, NCTU
2015 **Academic Achievement Award (Top 5% in class)**, NCTU
2014 **Academic Achievement Award (Top 5% in class)**, NCTU
Academic Achievement Award (Top 5% in class), NCTU
2013 **Academic Achievement Award (Top 5% in class)**, NCTU
2012-2016 **Outstanding Entrance Scholarship**, NCTU

Skills

Languages — Mandarin Chinese (Native), Taiwanese (Native), English (Fluent), Japanese (Conversational), German (Basic)
Programming — Python, C, C++, Bash, LabVIEW, LaTeX, ROOT
Web Dev — Html, css

Certificates

2017 **Japanese Language Proficiency Test (JLPT)** N2
2015 **TOEFL IBT Test** 100, Reading 27, Listening 25, Speaking 24, Writing 24
GRE General Test Verbal 149, Quantitative 170, Total 310, Analytical Writing 3.0
2014 **GRE Physics Subject Test** 960
Goethe-Zertifikat A2 (German Proficiency Test)

Miscellaneous Experience

Academic Activities

2020–now **Member**, The LIGO-Virgo-KAGRA (LVK) collaboration
2017–now **Member**, The Physical Society of Japan
2016–now **Member**, KAGRA collaboration
2017–2018 **Research Assistant**, High Energy Accelerator Research Organization (KEK), Japan
2016 **Exchange Student**, University of Stuttgart, Germany
2015 **Visiting Student Researcher**, LeCosPA, NTU, Taiwan
2014 **Semiconductor Leader Elite Camp**, Taiwan Semiconductor Manufacturing Company, Taiwan
2013 **Visiting Student Researcher**, LeCosPA, NTU, Taiwan

Extracurricular Activities

2018–now **Director**, Taiwanese student association, The University of Tokyo, Kashiwa campus
2012–2016 **Member**, Male Basketball Team, Department of Electrophysics, NCTU
2015 **Award for Excellent**, Chinese Calligraphy competition, NCTU
2014 **Staff**, Electrophysics camp, NCTU
2013 **Award for Excellent**, Chinese Calligraphy competition, NCTU
Fourth place, National Basketball Association of colleges of physics and related departments
2012 **Award for Excellent**, Chinese Calligraphy competition, NCTU

Oral Presentations

2021 **Analysis of gravitational wave signals from core-collapse supernovae with Non-Harmonic Analysis**, ICRR Master and Doctor Thesis Workshop 2021 (online), The University of Tokyo, February 2021

2020 **Analysis of gravitational wave signals from core-collapse supernovae with Non-Harmonic Analysis**, JPS 2020 Autumn meeting (online), ICRR, University of Tsukuba, September 2020

2018 **Development and Characterization of Optical Follower Servo of Photon Calibrator for KAGRA Gravitational Wave Observation**, 2018 Annual (73th) JPS meeting, Tokyo University of Science, March 2018

The current status of Photon Calibrator in KAGRA, ICRR Master and Doctor Thesis Workshop 2018, ICRR, The University of Tokyo, February 2018

Development and Characterization of Optical Follower Servo of Photon Calibrator for KAGRA Gravitational Wave Observation, 2018 Taiwan Physics Society Meeting, National Taiwan University, Taiwan, January 2018

2017 **Development and Characterization of Optical Follower Servo for Photon Calibrator**, JPS 2017 Autumn meeting, Utsunomiya University, September 2017.

Assembly of Prototype Sapphire suspension, The 3rd KAGRA International Workshop, Academia Sinica, Taiwan, May 2017.

Publications

The LIGO-Virgo-KAGRA (LVK) collaboration paper

1. LVK collaboration. (2021a). Constraints on the cosmic expansion history from GWTC-3, arXiv 2111.03604.
2. LVK collaboration. (2021b). GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo During the Second Part of the Third Observing Run, arXiv 2111.03606.
3. LVK collaboration. (2021c). Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift During the LIGO-Virgo Run O3b, arXiv 2111.03608.
4. LVK collaboration. (2021d). The population of merging compact binaries inferred using gravitational waves through GWTC-3, arXiv 2111.03634.
5. LVK collaboration. (2021e). All-sky, all-frequency directional search for persistent gravitational-waves from Advanced LIGO's and Advanced Virgo's first three observing runs, arXiv 2110.09834.
6. LVK collaboration. (2021f). Search for continuous gravitational waves from 20 accreting millisecond X-ray pulsars in O3 LIGO data, arXiv 2109.09255.
7. LVK collaboration. (2021h). All-sky search for long-duration gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run, arXiv 2107.13796.
8. LVK collaboration. (2021i). All-sky search for short gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run, arXiv 2107.03701.
9. LVK collaboration. (2021j). Constraints on dark photon dark matter using data from LIGO's and Virgo's third observing run, arXiv 2105.13085.
10. LVK collaboration. (2021k). Search for intermediate mass black hole binaries in the third observing run of Advanced LIGO and Advanced Virgo, arXiv 2105.15120.
11. LVK collaboration. (2021l). Constraints from LIGO O3 data on gravitational-wave emission due to r-modes in the glitching pulsar PSR J0537-6910, arXiv 2104.14417.
12. LVK collaboration. (2021m). All-sky search for continuous gravitational waves from isolated neutron stars in the early O3 LIGO data. *Phys. Rev. D*, *104*(8), 082004. https://doi.org/10.1103/PhysRevD.104.082004
13. LVK collaboration. (2021n). Constraints on Cosmic Strings Using Data from the Third Advanced LIGO–Virgo Observing Run. *Phys. Rev. Lett.*, *126*(24), 241102. https://doi.org/10.1103/PhysRevLett.126.241102
14. LVK collaboration. (2021o). Diving below the spin-down limit: Constraints on gravitational waves from the energetic young pulsar PSR J0537-6910. *Astrophys. J.*, *913*, L27. https://doi.org/10.3847/2041-8213/abffcd
15. LVK collaboration. (2021p). Observation of Gravitational Waves from Two Neutron Star–Black Hole Coalescences. *Astrophys. J. Lett.*, *915*(1), L5. https://doi.org/10.3847/2041-8213/ac082e
16. LVK collaboration. (2021q). Search for anisotropic gravitational-wave backgrounds using data from Advanced LIGO and Advanced Virgo's first three observing runs. *Phys. Rev. D*, *104*(2), 022005. https://doi.org/10.1103/PhysRevD.104.022005

17 LVK collaboration. (2021r). Searches for Continuous Gravitational Waves from Young Supernova Remnants in the Early Third Observing Run of Advanced LIGO and Virgo. *Astrophys. J.*, *921*(1), 80. https://doi.org/10.3847/1538-4357/ac17ea

18 LVK collaboration. (2021s). Upper limits on the isotropic gravitational-wave background from Advanced LIGO and Advanced Virgo's third observing run. *Phys. Rev. D*, *104*(2), 022004. https://doi.org/10.1103/PhysRevD.104.022004

19 LVK collaboration. (2020). Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. *Living Rev. Rel.*, *23*(1), 3. https://doi.org/10.1007/s41114-020-00026-9

The KAGRA collaboration paper

1 KAGRA collaboration. (2021a). Radiative Cooling of the Thermally Isolated System in KAGRA Gravitational Wave Telescope. *J. Phys. Conf. Ser.*, *1857*(1), 012002. https://doi.org/10.1088/1742-6596/1857/1/012002

2 KAGRA collaboration. (2021b). Vibration isolation systems for the beam splitter and signal recycling mirrors of the KAGRA gravitational wave detector. *Class. Quant. Grav.*, *38*(6), 065011. https://doi.org/10.1088/1361-6382/abd922

3 KAGRA collaboration. (2021c). Overview of KAGRA: Calibration, detector characterization, physical environmental monitors, and the geophysics interferometer. *Prog. Theor. Exp. Phys.*, ptab018. https://doi.org/10.1093/ptep/ptab018

4 KAGRA collaboration. (2020a). Overview of KAGRA: Detector design and construction history. *Prog. Theor. Exp. Phys.*, ptaa125. https://doi.org/10.1093/ptep/ptaa125

5 KAGRA collaboration. (2020b). Overview of KAGRA : KAGRA science. *Prog. Theor. Exp. Phys.*, ptaa120. https://doi.org/10.1093/ptep/ptaa120

6 KAGRA collaboration. (2020c). Application of the independent component analysis to the iKAGRA data. *Prog. Theor. Exp. Phys.*, *2020*(5), 053F01. https://doi.org/10.1093/ptep/ptaa056

7 KAGRA collaboration. (2020d). An arm length stabilization system for KAGRA and future gravitational-wave detectors. *Class. Quant. Grav.*, *37*(3), 035004. https://doi.org/10.1088/1361-6382/ab5c95

8 KAGRA collaboration. (2020e). The status of KAGRA underground cryogenic gravitational wave telescope. *J. Phys. Conf. Ser.*, *1342*(1), 012014. https://doi.org/10.1088/1742-6596/1342/1/012014

9 KAGRA collaboration. (2019a). First cryogenic test operation of underground km-scale gravitational-wave observatory KAGRA. *Class. Quant. Grav.*, *36*(16), 165008. https://doi.org/10.1088/1361-6382/ab28a9

10 KAGRA collaboration. (2019b). Vibration isolation system with a compact damping system for power recycling mirrors of KAGRA. *Class. Quant. Grav.*, *36*(9), 095015. https://doi.org/10.1088/1361-6382/ab0fcb

11 KAGRA collaboration. (2019c). KAGRA: 2.5 Generation Interferometric Gravitational Wave Detector. *Nature Astronomy*, *3*(1), 35–40. https://doi.org/10.1038/s41550-018-0658-y