Jishnu Suresh
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POSITIONS HELD

October 2021 – onwards: Post-Doctoral Fellow
Centre for Cosmology, Particle Physics and Phenomenology (CP3),
Institute de Recherche en Mathématique et Physique (IRMP),
Université catholique de Louvain,
Ottignies-Louvain-la-Neuve, Belgium.

February 2019 – September 2021: Post-Doctoral Fellow
Institute for Cosmic Ray Research (ICRR),
The University of Tokyo,
Kashiwa, Japan.

August 2016 – January 2019: Post-Doctoral Fellow
Inter-University Centre for Astronomy and Astrophysics (IUCAA),
Pune, India.

November 2012 – September 2014: Project Research Fellow
Ph. D. Co-Funding from University Grant Commission-India,
Cochin University of Science and Technology, Kochi, India.

EDUCATION

August 2016: Ph. D. *(awarded in March 2017)*
Cochin University of Science and Technology (CUSAT), Kochi, India.
Thesis Title: "Thermodynamics and Geometrothermodynamics of black holes in modified theories of gravity."
Supervisor: Prof. V. C. Kuriakose
Co-supervisor: Prof. Ramesh Babu. T.

May 2012: Master of Science,
Department of Physics, Cochin University of Science and Technology, Kochi, India.
Project Title: "Modified holographic Ricci dark energy model and state finder diagnosis in the flat universe"
Supervisor: Prof. Titus. K. Mathew

May 2010: Bachelor of Science,
Government. College Madappally, Department of Physics, University of Calicut, Calicut, India.

SCHOLARSHIP/RESEARCH FELLOWSHIPS RECEIVED

2021 - 2022 Post-doctoral fellowship through Actions de recherche concertées (ARC) grant awarded to Université catholique de Louvain.

2019 - 2021 Post-doctoral fellowship through Japan Society for the Promotion of Science KAKENHI Grant No. JP17H06361 (awarded to Institute for Cosmic Ray Research.

2016 - 2019 Post-doctoral fellowship to work at Inter-University Centre for Astronomy and Astrophysics through the LIGO-India project grant.

2014 - 2016 Ph. D. Fellowship from Cochin University of Science and Technology Awarded to the winners of the Department Admission Test.

2012 - 2014 Research grant from University Grant Commission, India
They were awarded to Cochin University of Science and Technology through the project titled: “ Extended theories of gravity” (Ref. No: 41- 843/2012).

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

2021 - 2022 Member, American Astronomical Society.
2019 - Member, International Society on General Relativity and Gravitation.
2018 - Member, Indian Association for General Relativity and Gravitation.

MAJOR COLLABORATIONS

2022 - Working group member, COST action CosmoVerse
2022 - Working group member, COST action CosmicWISPers
2021 - Virgo collaboration
2021 - Einstein Telescope (ET) consortium
2019 - KAGRA collaboration
2016 - 2022 LIGO collaboration
2016 - 2019 Indigo Consortium, LIGO-India

TRACK RECORD

- Anisotropic sub-group chair in the LIGO-Virgo-KAGRA stochastic group (2022 - onwards).
- Paper writing team chair for the LIGO-Virgo-KAGRA all-sky-all-frequency stochastic gravitational-wave analysis (2019 - 2021, during the third LIGO-Virgo-KAGRA observing run).
- Working on the synergies between Stochastic gravitational wave background anisotropy and other electromagnetic tracers (2020 - onwards).
- Delivered the folded data set for each observational run (O) of LIGO and Virgo to the LIGO-Virgo-KAGRA collaboration for the analysis (delivered O1, O2, and O3 data sets). These data sets were made available to the public through The Gravitational Wave Open Science Center (2016 - 2022).
- Co-developer of a python-based stochastic gravitational-wave background data analysis pipeline, 'PyStoch' (2017-2018)
    - LIGO-Virgo-KAGRA collaboration used this pipeline for the directional searches for persistent gravitational wave sources) .
- Co-maintaining the stochastic gravitational-wave background data analysis pipeline, 'PyStoch' (2018 - onwards)
- Co-developed a new unified pipeline that can perform the stochastic gravitational-wave searches in pixel and spherical harmonic bases (2019 - 2021)
    - LIGO-Virgo-KAGRA collaboration will use this pipeline for the anisotropic searches for persistent gravitational wave sources in the upcoming fourth observing run.
- Contributed to the LIGO-Virgo-KAGRA stochastic directional search analysis and the subsequent paper writing team.
    - 2020-2021: during the third LIGO-Virgo-KAGRA observing run.
    - 2018-2019: during the second LIGO-Virgo observing run.
- Contributed to the offline gravitational-wave candidate Parameter Estimation Rota in the third observation run (2020-2021).
    - 2021: Analyzed the binary black hole event named GW200220_124850.

- Contributed to the KAGRA data quality shift during the preparations for the third observing run (2020).
- Extended the ideas of Geometrothermodynamics (incorporating differential geometry ideas to the black hole thermodynamics) to modified theories of gravity (2012-2016).

TEACHING ACTIVITIES

2017 Tutor - General relativity,
Pune University Masters course, Pune, India.
2016 Tutor - Group theory and Advanced mathematical techniques,
Cochin University of Science and Technology, Kochi, India.
2015 Tutor - General relativity,
Cochin University of Science and Technology, Kochi, India

ORGANIZATION OF SCIENTIFIC MEETINGS

2022 Organizer, Gravitational Wave Orchestra, two-day workshop, UCLouvain, Belgium

2020 Co-organizer, Astronomy Society of Kerala: VCK memorial workshop-II,
UC College, Aluva, Kerala, India.

2019 Co-organizer, Astronomy Society of Kerala: VCK memorial workshop-I,
UC College, Aluva, Kerala, India.

2016 Co-organizer/Resource person, School on Gravitation and Cosmology-II,
Cochin University of Science and Technology, Kochi, India.

2015 Co-organizer/Resource person, School on Gravitation and Cosmology-I,
Cochin University of Science and Technology, Kochi, India.

2014 Co-organizer/Resource person, Recent Developments in Cosmology,
IUCAA resource centre and SH College, Kochi, India.

PRESENTATIONS/ATTENDANCE AT CONFERENCES AND MEETINGS

- (presenter), Model-independent searches for anisotropic stochastic gravitational wave background, 10th Belgian-Dutch Gravitational Wave Meeting, 13-10-2022 to 14-10-2022, Ghent University, Ghent, Belgium.

- (presenter-poster), All-sky, all-frequency search for persistent gravitational-wave background, PHAROS Conference 2022: The multi-messenger physics and astrophysics of neutron stars, 16-05-2022 to 19-05-2022, La Sapienza University, Rome, Italy.

- (presenter), Jointly setting upper limits on multiple components of an anisotropic stochastic gravitational- wave background, 56th Rencontres de Moriond, 30-01-2022 to 19-03-2022, La Thuile, Italy.

- (presenter), Stochastic gravitational wave searches, Gravitational Wave and Exoplanet Colloquium, Belgian National Committee for Pure and Applied Physics, April 2, 2022, at the Royal Academy, Brussels.

- (presenter), All-sky, all-frequency directional search for persistent gravitational waves from Advanced LIGO's and Advanced Virgo's first three observing runs, Virgo Week, 15-11-2021 to 18-11-2021, EGO, Pisa, Italy.

- (presenter), Jointly setting upper limits on multiple components of an anisotropic stochastic gravitational-wave background, Belgian Gravitational-Wave Meeting, 03-11-2021, Université Libre de Bruxelles (ULB), Brussels, Belgium.

- (presenter), Jointly setting upper limits on multiple components of an anisotropic stochastic gravitational-wave background, 16th Marcel Grossmann Meetings (MG16), 05-07-2021 to 10-07-2021, Online.

- (presenter), Search for anisotropic gravitational-wave backgrounds using folded data, 4th annual symposium for the Innovative Area "Gravitational wave physics and astronomy: Genesis," 22-02-2021 to 24-02-2021, Online.

- (presenter), PyStoch: Stochastic Gravitational-Wave Background searches, Japan General Relativity and Gravitation (JGRG) workshop, 23-11-2020 to 27-11-2020, Online.

- (presenter), PyStoch and Spherical Harmonic search, LIGO-Virgo-KAGRA (LVK) collaboration meeting, 14-09-2020 to 16-09-2020, Cardiff University, UK (online).

- (presenter), PyStoch and Folded data set for O3 analysis, LIGO-Virgo-KAGRA (LVK) collaboration meeting, 18-03-2020 to 21-03-2020, Leonard elbarker Center for Gravitation, Cosmology, and Astrophysics, University of Wisconsin - Milwaukee, USA (online).

- (presenter), Component separation in Stochastic Gravitational-Wave Background searches, GW Physics and Astronomy Symposium: Genesis Symposium, 10-02-2020 to 12-02-2020, Konan University, Kobe, Japan.

- (presenter), Stochastic Gravitational-Wave Background map making techniques, Gravitational Wave Physics and Astronomy Workshop (GWPAW), 14-10-2019 to 17-10-2019, RESCEU, The University of Tokyo, Japan.

- (presenter), Stochastic Gravitational-Wave Background Mapmaking using regularized deconvolution, Topics in Astroparticle and Underground Physics (TAUP), 09-09-2019 to 13-09-2019, Toyama International Conference Center, Toyama, Japan.

- (presenter-poster), PyStoch: Stochastic gravitational wave background map-making tool, 22nd International Conference on General Relativity and Gravitation 13th Edoardo Amaldi Conference on Gravitational Waves, 07-07-2019 to 12-07-2019, Valencia, Spain.

- (presenter), PyStoch and Folded data set for O3 analysis, LIGO-Virgo Collaboration meeting, 18-03-2019 to 21-03-2019, Lake Geneva, Wisconsin.

- (presenter-poster), Stochastic Gravitational-Wave Background map-making, Multi-messenger astronomy in the era of LIGO-India, 15-01-2019 to 18-01-2019, Khandala, Pune, India.

- (presenter), O2 folded data set, PyStoch and O3 plans, LIGO-Virgo Collaboration meeting, 04-09-2018 to 07-09-2018, Maastricht University, Maastricht.

- (panelist), Physics and Astrophysics at the eXtreme (PAX) meeting, Cosmology and gravitation session, 07-08-2018 to 10-08-2018, IUCAA, Pune

- (contributor), Efficient Techniques to Probe Stochastic Gravitational-Wave Background Anisotropy with Ground-based Detectors, Fifteenth Marcel Grossmann Meeting – MG15, 01-07-2018 to 07-07-2018, University of Rome "La Sapienza," Rome.

- (presenter), O1/O2 folded data set and PyStoch updates, LIGO-Virgo Collaboration meeting, 19-03-2018 to 22-03-2018, Sonoma State University, Sonoma.

- (contributor), Efficient mapmaking of the stochastic gravitational wave background, 03-09-2017 to 05-09-2017, INFN-Pisa, Pisa.

- (contributor), Updates on PyStoch, LIGO-Virgo Collaboration meeting, 28-08-2017 to 01-09-2017, CERN, Geneva.

INVITED TALKS AT UNIVERSITIES AND COLLEGES

- Gravitational Wave Orchestra - being sensitive is crucial, 04-08-2022, Physics Colloquium, Department of Physics, Cochin University of Science and Technology, Kerala, India.

- Exploring the universe with gravitational waves, 22-11-2021, The New College (Autonomous), Department of Physics, Chennai, India.

- Gravitational waves: Murmur from the dark universe, 11-10-2021, Mar Thoma College, Department of Physics, Chungathara, Kerala, India.

- The universe and the gravitational waves, 09-10-2021, Bharata Mata College, Department of Physics, Thrikkakkara, Kerala, India.

- Stochastic gravitational-wave background map-making techniques, 02-02-2021, Centre for Cosmology, Particle Physics and Phenomenology, Université Catholique de Louvain, Belgium.

- The murmur from the dark universe: Gravitational Waves, 07-01-2021, Government College Madappally, Department of Physics, Vadakara, Kerala, India.

- Gravitational Waves, 19-05-2020, Tele Science Program, Kerala State Education Board Initiative, Kerala, India.

- The murmur from the dark universe, 10-05-2020, St Paul's College, Department of Physics, Kalamassery, Kerala, India.

- Listening to the gravitational wave orchestra, 09-01-2020, Cochin University of Science and Technology, Department of Physics, Kochi, Kerala.

- Stochastic gravitational wave background map-making, 29-07-2019, Tamkang University, Taiwan.

- Stochastic gravitational wave background, 30-08-2019, Astronomy Society of Kerala, VCK memorial workshop, UC College, Aluva, Kerala, India.

- Efficient techniques to probe Stochastic Gravitational-Wave Background anisotropy with ground-based detectors, 16-04-2019, Kavli Institute for the Physics and Mathematics of the Universe (Kavli IPMU), The University of Tokyo, Japan.

- An efficient technique to probe Stochastic Gravitational-Wave Background Anisotropy with ground-based detectors, 11-03-2019, The University of Tokyo, Institute for Cosmic Ray Research, Tokyo, Japan.

- Stochastic gravitational wave background, 09-07-2018, Cochin University of Science and Technology, Department of Physics, Kochi, Kerala, India.

- Stochastic gravitational wave background map-making, 02-12-2017, Regional Astronomy Meeting 2017, Wayanad, Kerala, India.

- What comes next from LIGO?, 08-08-2017, Cochin University of Science and Technology, Department of Physics, Kochi, Kerala, India.

TRAVEL/CONFERENCE GRANTS

- ARISF grant to participate and present my research in the 56th Rencontres de Moriond 2022.
- A grant from INFN Pisa for a one-week visit to Giancarlo Cella (University of Pisa) in 2021.
- A grant from NFN Pisa for a one-week visit to Giancarlo Cella (University of Pisa) in 2017.

SUPERVISION OF GRADUATE STUDENTS AND PROJECT FELLOWS

2022 - onwards (co-mentoring)
1-Ph.D Student:
Stavros Venikoudis - Université catholique de Louvain

2021 - onwards (co-mentoring)
1-Ph.D Student:
Federico De Lillo - Université catholique de Louvain

2018 3-Master Students:
Sambit Panda – BITS Pilani, Rajasthan, India.
Anitta Sunny – Calicut University, Kerala, India.
Radhika Manoj – Calicut University, Kerala, India.
(Now, Ph. D. student at the University of Delhi, Delhi, India)

2017 1-Master Student:
Mahith Madankumar - Cochin University of Science and Technology, Kochi, India.
(Now, Ph. D. student at the University of New Brunswick)

2015 2-Master Students:

Masroor CP – Mahatma Gandhi University, Kottayam, India.
(Now, Ph. D student at YITP, Kyoto University, Kyoto, Japan)

Geethu Prabhakar – Mahatma Gandhi University, Kottayam, India.
(Now, Ph. D. student at IIST, Trivandrum, Kerala, India)

PUBLIC OUTREACH ACTIVITIES

- Astronomical Society of Kerala (ASK): Organizing workshops and skywatch programs across Kerala, India (2019 - onwards)
- Astronomy for school students: Monthly events organized by Cochin University of Science and Technology in collaboration with the IUCAA resource centre (2012 - 2016)
- National Science day Celebrations at IUCAA, India (2017,2018)

REFERENCE

(email id and contact details can be provided upon request)

1 . Giacomo Bruno
Professor,
Centre for Cosmology, Particle Physics and Phenomenology (CP3),
Université catholique de Louvain, Louvain-la-Neuve, Belgium.

2. Hideyuki Tagoshi
Professor,
Institute for Cosmic Ray Research, The University of Tokyo, Tokyo, Japan.

3. Sanjit Mitra
Professor,
Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India.

4. Vuk Mandic
Professor,
School of Physics and Astronomy, Minnesota Institute for Astrophysics, USA.

5. Tania Regimbau
Director of Research at CNRS,
Laboratoire d'Annecy de Physique des Particules (LAAP), Annecy le vieux, France.

PUBLICATIONS

A. Short author-list Publications in peer-reviewed journals

1. Targeted search for the stochastic gravitational-wave background from the galactic millisecond pulsar population, D. Agarwal, J. Suresh, V. Mandic, A. Matas, and T. Regimbau, Phys.Rev.D 106 (2022) 4, 043019, arXiv:2204.08378.

2. Stochastic gravitational-wave background searches and constraints on neutron-star ellipticity, F. DeLillo, J. Suresh, A. L. Miller, MNRAS 513, 1105–1114 (2022), arXiv: 2203.03536.

3. Gravitational-wave geodesy: Defining false alarm probabilities with respect to correlated noise, J. Kamiel, T. A. Callister, N. Christensen, M. Coughlin, I. Michaloliakos, J. Suresh, Nv.Remortel, Phys. Rev. D 105, 082001 (2022).

4. Jointly setting upper limits on multiple components of an anisotropic stochastic gravitational-wave background, J. Suresh, D. Agarwal, S. Mitra, Phys. Rev. D 104, 102003 (2021).

5. Upper limits on persistent gravitational waves using folded data and the full covariance matrix from Advanced LIGO's first two observing runs, D. Agarwal, J. Suresh, S. Mitra, A. Ain, Phys. Rev. D 104, 123018 (2021).

6. Unified Mapmaking for Anisotropic Stochastic Gravitational Wave Background, J. Suresh, A. Ain, S. Mitra, arXiv: 2011.05969, Phys. Rev. D 103, 083024 (2021).

7. The science case for LIGO-India, S. Mohammed, R. Javed, V. Gayathri, A. Vijaykumar, Aditya, S. Goyal, S. Sachdev, J. Suresh, S. Suyamprakasam, A. Mukherjee, G. Gaur, B. Sathyaprakash, A. Pai, R. Adhikari, P. Ajith, S. Bose, arXiv: 2105.01716, Class. Quantum. Grav. (2021), http://iopscience.iop.org/article/10.1088/1361-6382/ac3b99

8. Stochastic gravitational wave background mapmaking using regularized deconvolution, S. Panda, S. Bhagwat, J. Suresh, S. Mitra, arXiv:1905.08276 [gr-qc], Phys. Rev. D 100 (2019) no.4, 043541

9. Very fast stochastic gravitational wave background map making using folded data, A. Ain, J. Suresh, S. Mitra, arXiv:1803.08285 [gr-qc], Phys.Rev. D98 (2018) no.2, 024001.

10. Thermodynamics of Charged Lovelock - AdS Black Holes, C.B. Prasobh, J. Suresh, V. C. Kuriakose, arXiv:1510.04784 [gr-qc], Eur.Phys.J. C76 (2016) no.4, 207.

11. Entropy spectrum of (1+1) dimensional stringy black holes, J. Suresh, V.C. Kuriakose, arXiv:1501.04852 [gr-qc], Eur.Phys.J. C75 (2015) no.5, 214.

12. A unified thermodynamic picture of Hořava-Lifshitz black hole in arbitrary space time, J. Suresh, R. Tharanath, V.C. Kuriakose, arXiv:1408.0911 [gr-qc], JHEP 1501 (2015) 019.

13. Phase transitions and Geometrothermodynamics of Regular black holes, R. Tharanath, J. Suresh, V.C. Kuriakose, arXiv:1406.3916 [gr-qc], Gen.Rel.Grav. 47 (2015) no.4, 46.

14. Thermodynamic Geometry of Reissener-Nordstrom-de Sitter black hole and its extremal case, R. Tharanath, J. Suresh, Nijo Varghese, V.C. Kuriakose, arXiv:1404.6789 [gr-qc], Gen.Rel.Grav. 46 (2014) 1743.

15. The thermodynamics and thermodynamic geometry of the Park black hole, J. Suresh, R. Tharanath, Nijo Varghese, V.C. Kuriakose, arXiv:1403.4710 [gr-qc], Eur.Phys.J. C74 (2014) 2819.

16. Thermodynamics and quasinormal modes of Park black hole in Horava gravity, J. Suresh, V.C. Kuriakose, arXiv:1310.2011 [gr-qc], Eur.Phys.J. C73 (2013) no.10, 2613.

17. Area spectrum and thermodynamics of KS black holes in Horava gravity, J. Suresh, V.C. Kuriakose, arXiv:1307.6438 [gr-qc], Gen.Rel.Grav. 45 (2013) 1877-1886.

18. Modified holographic Ricci dark energy model and state finder diagnosis in flat universe, T. K. Mathew, J. Suresh, D. Divakaran, arXiv:1207.5886 [astro-ph.CO], Int.J.Mod.Phys. D22 (2013) 1350056.

B. Short author-list Publications in preprint format/submitted to journal

1. Probing Ensemble Properties of Vortex-avalanche Pulsar Glitches with a Stochastic Gravitational-Wave Background Search, F. De. Lillo, J. Suresh, A. Depasse, M. Sieniawska, A. L. Miller, G. Bruno arXiv: 2211.16857 [gr-qc].

2. Component separation map making for stochastic gravitational wave background, A. Parida, J. Suresh, S. Mitra, S. Jhingan, arXiv:1904.05056 [gr-qc].

3. Thermodynamics and Geometrothermodynamics of Charged black holes in Massive Gravity, Jishnu Suresh, C. P. Masroor, Geethu Prabhakar, V. C. Kuriakose, arXiv:1603.00981 [gr-qc].

4. Geometrothermodynamics of BTZ black hole in new massive gravity, J. Suresh, V.C. Kuriakose, arXiv:1606.06098 [gr-qc].

5. Entropy spectrum of BTZ black hole in massive gravity, J. Suresh, V.C. Kuriakose, arXiv:1605.00142 [gr-qc].

C. LIGO-Virgo-KAGRA collaboration wide author-list publications where the candidate has made significant contributions (*author list is in alphabetical order*)

1. All-sky, all-frequency directional search for persistent gravitational-waves from Advanced LIGO's and Advanced Virgo's first three observing runs, R. Abbott, and others (LIGO Scientific, Virgo Collaborations, and KAGRA collaboration), Phys. Rev. D 105, 122001 (2022).
   J. Suresh led the paper writing team for the LIGO-Virgo-KAGRA collaboration and delivered the data set for the analyses described in this paper.

2. Search for anisotropic gravitational-wave backgrounds using data from Advanced LIGO and Advanced Virgo’s first three observing runs, R. Abbott, and others (LIGO Scientific, Virgo Collaborations, and KAGRA collaboration), Phys. Rev. D 104, 022005 (2021).
   J. Suresh led the narrowband analysis described in this paper and delivered the data set for all the analyses described in this paper. In addition, J. Suresh took part in the paper writing team.

3. Directional limits on persistent gravitational waves using data from Advanced LIGO's first two observing runs, R. Abbott, and others (LIGO Scientific and Virgo Collaborations), arXiv:1903.08844 [gr-qc], Phys. Rev. D 100 (2019) no.6, 062001.
   J. Suresh contributed to the outlier follow-up activities described in this paper.

4. GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo During the Second Part of the Third Observing Run, Abbott, R. and others /9LIGO Scientific and VIRGO and KAGRA Collaborations), arXiv:: 2111.03606 [gr-qc].
   J. Suresh contributed to the offline parameter estimation of the binary black hole event named GW200220_124850, by participating in the Parameter Estimation rota.

D. Other publications, including LIGO-Virgo-KAGRA collaboration wide author-list publications

1. Search for subsolar-mass black hole binaries in the second part of Advanced LIGO's and Advanced Virgo's third observing run, R. Abbott, and others (LIGO Scientific, Virgo Collaborations, and KAGRA collaboration), arXiv:2212.01477 [astro-ph.HE].
2. Search for gravitational-wave transients associated with magnetar bursts in Advanced LIGO and Advanced Virgo data from the third observing run, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2210.10931 [astro-ph.HE].
3. Input optics systems of the KAGRA detector during O3GK, KAGRA Collaboration, T. Akutsu, et al., arXiv: 2210.05934 [gr-qc].
4. Model-based cross-correlation search for gravitational waves from the low-mass X-ray binary Scorpius X-1 in LIGO O3 data, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2209.02863 [astro-ph.HE], Astrophys.J.Lett. 941 (2022) 2, L30.
5. Noise subtraction from KAGRA O3GK data using Independent Component Analysis, KAGRA Collaboration • H. Abe, et al., arXiv: 2206.05785 [astro-ph.IM].
6. The Current Status and Future Prospects of KAGRA, the Large-Scale Cryogenic Gravitational Wave Telescope Built in the Kamioka Underground, Galaxies 10, no.3, 63 (2022).
7. Search for continuous gravitational wave emission from the Milky Way center in O3 LIGO--Virgo data, R. Abbott et al., arXiv:2204.04523 [astro-ph.HE], Phys.Rev.D 106 (2022) 4, 042003.
8. Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB During the LIGO--Virgo Observing Run O3a, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2203.12038 [astro-ph.HE].
9. Performance of the KAGRA detector during the first joint observation with GEO 600 (O3GK), KAGRA Collaboration, H. Abe, et al., arXiv: 2203.07011 (2022), Progress of Theoretical and Experimental Physics, 2022;, ptac093.
10. First joint observation by the underground gravitational-wave detector, KAGRA, with GEO600, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2203.01270 [gr-qc], PTEP 2022 (2022) 6, 063F01.

11. Search for gravitational waves from Scorpius X-1 with a hidden Markov model in O3 LIGO data, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2201.10104 [gr-qc], Phys.Rev.D 106 (2022) 6, 062002.

12. All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO and Advanced Virgo O3 data, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2201.00697 [gr-qc], Phys.Rev.D 106 (2022) 10, 102008.

13. Narrowband Searches for Continuous and Long-duration Transient Gravitational Waves from Known Pulsars in the LIGO-Virgo Third Observing Run, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2112.10990 [gr-qc], Astrophys.J. 932 (2022) 2, 133.

14. Tests of General Relativity with GWTC-3, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2112.06861 [gr-qc].

15. All-sky search for gravitational wave emission from scalar boson clouds around spinning black holes in LIGO O3 data, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2111.15507 [astro-ph.HE], Phys.Rev.D 105 (2022) 10, 102001.

16. Search of the early O3 LIGO data for continuous gravitational waves from the Cassiopeia A and Vela Jr. supernova remnants, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv:2111.15116 [gr-qc], Phys.Rev.D 105 (2022) 8, 082005.

17. Searches for Gravitational Waves from Known Pulsars at Two Harmonics in the Second and Third LIGO-Virgo Observing Runs, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2111.13106 [astro-ph.HE], Astrophys.J. 935 (2022) 1, 1.

18. Constraints on the cosmic expansion history from GWTC-3, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2111.03604 [astro-ph.CO].

19. The population of merging compact binaries inferred using gravitational waves through GWTC-3, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2111.03634 [astro-ph.HE].

20. Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift during the LIGO–Virgo Run O3b, LIGO Scientific and VIRGO and

KAGRA Collaborations, R. Abbott et al., arXiv: 2111.03608 [astro-ph.HE], Astrophys.J. 928 (2022) 2, 186.

21. Search for subsolar-mass binaries in the first half of Advanced LIGO and Virgo's third observing run, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2109.12197 [astro-ph.CO], Phys.Rev.Lett. 129 (2022) 6, 061104.

22. Search for continuous gravitational waves from 20 accreting millisecond X-ray pulsars in O3 LIGO data, LIGO Scientific and VIRGO and KAGRA Collaborations, R. Abbott et al., arXiv: 2109.09255 [astro-ph.HE], Phys.Rev.D 105 (2022) 022002.

23. GWTC-2.1: Deep Extended Catalog of Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run, LIGO Scientific and VIRGO Collaborations, R. Abbott et al., arXiv: 2108.01045 [gr-qc].

24. All-sky search for long-duration gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run, KAGRA and VIRGO and LIGO Scientific Collaborations, R. Abbott. Et al., arXiv: 2107.13796 [gr-qc], Phys.Rev.D 104 (2021) 10, 102001.

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