List of Publications

Sumanta Chakraborty

2023

1. **Sumanta Chakraborty** and Naresh Dadhich, *Universality of the Buchdahl sphere*, European Physical Journal C, **83**, 677 (2023). [arXiv:2204.10734]

2. Sajal Mukherjee and **Sumanta Chakraborty**, *Transition from inspiral to plunge for braneworld EMRI*, Classical and Quantum Gravity, **40**, 145013 (2023). [arXiv:2212.07018]

3. Sreejith Nair, **Sumanta Chakraborty** and Sudipta Sarkar, *Dynamical Love for area quantized black holes*, Physical Review D, **107**, 124041 (2023). [arXiv:2208.06235]

4. Justin Feng, **Sumanta Chakraborty** and Vitor Cardoso, *Shielding a charged black hole*, Physical Review D, **107**, 044050 (2023). [arXiv:2211.05261]

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5. Shauvik Biswas, Mostafizur Rahman and **Sumanta Chakraborty**, *Echoes from braneworld wormholes*, Physical Review D, **106**, 124003 (2022). [2205.14743]

6. Indranil Chakraborty, Soumya Bhattacharyya and **Sumanta Chakraborty**, *Gravitational wave memory in wormhole spacetimes*, Physical Review D, **106**, 104057 (2022). [2207.00226]

7. Indrani Banerjee, **Sumanta Chakraborty** and Soumitra SenGupta, *Hunting extra dimensions in the shadow of Sgr A**, Physical Review D, **106**, 084051 (2022). [2207.09003]

8. Akash K. Mishra, Abhirup Ghosh and **Sumanta Chakraborty**, *Constraining extra dimensions using observations of black hole quasi-normal modes*, European Physical Journal C, **82**, 820 (2022). [2106.05558]

9. [**Invited Article; For Special Issue: In Memory of T. Padmanabhan**]
   Justin Feng and **Sumanta Chakraborty**, *Weiss variation for general boundaries*, General Relativity and Gravitation, **54**, 67 (2022). [2111.06987]

10. **Sumanta Chakraborty**, Elisa Maggio, Anupam Majumdar and Paolo Pani, *Implications of the quantum nature of black hole horizon on the gravitational wave ringdown*, Physical Review D, **106**, 024041 (2022). [2202.09111]

11. Edgardo Franzin, Stefano Liberati, Jacopo Mazza, Ramit Dey and **Sumanta Chakraborty**, *Scalar perturbations around rotating regular black holes and wormholes: quasi-normal modes, ergoregion instability and superradiance*, Physical Review D, **105**, 124051 (2022). [2201.01650]

12. Chiranjeeb Singha, **Sumanta Chakraborty** and Naresh Dadhich, *Strong cosmic censorship conjecture for a charged BTZ black hole*, Journal of High Energy Physics, **2206**, 028 (2022). [2203.07708]

13. **Sumanta Chakraborty**, Debodirna Ghosh, Sk. Jahanur Hoque, Aniket Khairner and Amitabh Virmani, *Supertranslations at timelike infinity*, Journal of High Energy Physics, **2202**, 022 (2022). [2111.08907]

14. **Sumanta Chakraborty** and Subir Ghosh, *Non-trivial time crystal-like ground state for gravitational perturbation in quadratic gravity*, Physics of the Dark Universe, **35**, 100976 (2022). [2001.04680]

15. Karthik Rajeev, Vikramaditya Mondal and **Sumanta Chakraborty**, *Bouncing with shear: Implications from quantum cosmology*, Journal of Cosmology and Astroparticle Physics, **2201**, 008 (2022). [2109.08696]

16. [**Invited Article; For Special Issue: Probing the dark universe with theory and observation**]
Sumanta Chakraborty, Supratik Pal and Soumitra SenGupta, *Hilltop inflation and generation of helical magnetic field*, Universe, **8**, 26 (2022). [1810.03478]

17. T. Padmanabhan and **Sumanta Chakraborty**, *Microscopic Origin of Einstein's field equations and the raison d'être for a positive cosmological Constant*, Physics Letters B, **824**, 136828 (2022). [2112.09446]

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18. [**Invited Article; For Special Issue: A Trip Across The Universe**]
Sumanta Chakraborty, *Bound on photon circular orbits in General Relativity and Beyond*, Galaxies, **9**, 96 (2021). [2111.04912]

19. **Sumanta Chakraborty**, Sayak Datta and Subhadip Sau, *Tidal heating of black holes and exotic compact objects on the brane*, Physical Review D, **104**, 104001 (2021). [arXiv: 2103.12430]

20. Indrani Banerjee, **Sumanta Chakraborty** and Soumitra SenGupta, *Looking for extra dimensions in the observed quasi-periodic oscillations of black holes*, Journal of Cosmology and Astroparticle Physics, **2109**, 037 (2021). [arXiv:2105.06636]

21. **Sumanta Chakraborty**, Sk. Jahanur Hoque and Roberto Oliveri, *Gravitational multipole moments for asymptotically de Sitter spacetimes*, Physical Review D, **104**, 064019 (2021). [arXiv:2105.09971]

22. Karthik Rajeev, Vikramaditya Mondal and **Sumanta Chakraborty**, *No-boundary wave function, Wheeler-DeWitt equation, and path integral analysis of bouncing quantum cosmology*, Physical Review D, **103**, 106008 (2021). [arXiv:2101.02848]

23. **Sumanta Chakraborty** and Justin Feng, *Perturbations of the almost Killing equation and their implications*, Physical Review D, **103**, 084020 (2021). [arXiv:2011.13955]

24. Ramit Dey, Shauvik Biswas and **Sumanta Chakraborty**, *Ergoregion instability and echoes for braneworld black holes: Scalar, electromagnetic and gravitational perturbations*, Physical Review D, **103**, 084019 (2021). [arXiv:2010.07966]

25. **Sumanta Chakraborty** and T. Padmanabhan, *Eddington Gravity with matter: An emergent perspective*, Physical Review D, **103**, 064033 (2021). [arXiv:2012.08542]

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26. Sajal Mukherjee and **Sumanta Chakraborty**, *Multipole moments of compact objects with NUT charge: Theoretical and observational implications*, Physical Review D, **102**, 124058 (2020). [arXiv:2008.06891]

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28. **Sumanta Chakraborty**, *Softly broken conformal symmetry with higher curvature terms*, Physical Review D, **102**, 064030 (2020). [arXiv:2004.09690]

29. Mostafizur Rahman, Soumodeep Mitra and **Sumanta Chakraborty**, *Strong cosmic censorship with NUT charge and conformal coupling*, Classical and Quantum Gravity, **37**, 195004 (2020). [arXiv:2001.00599]

30. **Sumanta Chakraborty** and Naresh Dadhich, *Limits on stellar structures in Lovelock theories of gravity*, Physics of the Dark Universe **30**, 100658 (2020). [arXiv:2005.07504]

31. Ramit Dey, **Sumanta Chakraborty** and Niayesh Afshordi, *Echoes from the braneworld black holes*, Physical Review D **101**, 104014 (2020). [arXiv:2001.01301]

32. Kabir Chakravarti, **Sumanta Chakraborty**, Khun Sang Phukon, Sukanta Bose and Soumitra SenGupta, *Constraining extra-spatial dimensions with observations of GW170817*, Classical and Quantum Gravity **37**, 105004 (2020). [arXiv:1903.10159]

33. Akash K. Mishra and **Sumanta Chakraborty**, *Strong cosmic censorship in higher curvature gravity*, Physical Review D **101**, 064041 (2020). [arXiv:1911.09855]

34. **Sumanta Chakraborty** and T. Padmanabhan, *Boundary term in the gravitational action is the heat content of the null surfaces*, Physical Review D **101**, 064023 (2020). [arXiv:1909.00096]

35. Indrani Banerjee, **Sumanta Chakraborty** and Soumitra SenGupta, *Silhouette of M87*: A New Window to Peek into the World of Hidden Dimensions*, Physical Review D [**Rapid Communication**] **101**, 041301 (2020). [arXiv:1909.09385]

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36. T.R. Govindarajan and **Sumanta Chakraborty**, *Embedding in flat spacetime and black hole thermodynamics*, Modern Physics Letters A **34**, 2050013 (2019). [arXiv:1908.09074]

37. **Sumanta Chakraborty**, Dawood Kothawala and Alessandro Pesci, *Raychaudhuri equation with zero point length*, Physics Letters B **797**, 134877 (2019). [arXiv:1904.09053]

38. Indrani Banerjee, **Sumanta Chakraborty** and Soumitra SenGupta, *Decoding signatures of extra dimensions and estimating spin of quasars from the continuum spectrum*, Physical Review D **100**, 044045 (2019). [arXiv:1905.08043]

39. Karthik Rajeev, **Sumanta Chakraborty** and T. Padmanabhan, *Generalized Schwinger effect and particle production in an expanding universe*, Physical Review D **100**, 045019 (2019). [arXiv:1904.03207]

40. Akash K. Mishra, **Sumanta Chakraborty** and Sudipta Sarkar, *Understanding photon sphere and black hole shadow in dynamically evolving spacetimes*, Physical Review D **99**, 104080 (2019). [arXiv:1903.06376]

41. Mostafizur Rahman, **Sumanta Chakraborty**, Soumitra SenGupta and Anjan A. Sen, *Fate of Strong Cosmic Censorship Conjecture in Presence of Higher Spacetime Dimensions*, Journal of High Energy Physics **1903**, 178 (2019). [arXiv:1811.08538]

42. Sajal Mukherjee, **Sumanta Chakraborty** and Naresh Dadhich, *On some novel features of the Kerr-Newman-NUT Spacetime*, European Physical Journal C **79**, 161 (2019). [arXiv:1807.02216]

43. [**Editor's Choice**] **Sumanta Chakraborty** and Krishnamohan Parattu, *Null Boundary Terms for Lanczos-Lovelock Gravity*, General Relativity and Gravitation **51**, 23 (2019). [arXiv:1806.08823]

44. Kabir Chakravarti, **Sumanta Chakraborty**, Sukanta Bose and Soumitra SenGupta, *Tidal Love Numbers of Black Holes and Neutron Stars in the Presence of Higher Dimensions: Implications of GW170817*, Physical Review D **99**, 024036 (2019). [arXiv:1811.11364]

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46. **Sumanta Chakraborty** and Kinjalk Lochan, *Decoding Infrared Imprints of Quantum Origins of Black Holes*, Physics Letters B **789**, 276 (2019). [arXiv:1711.10660]

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48. **Sumanta Chakraborty** and Ramit Dey, *Noether current, Black hole entropy and Spacetime torsion*, Physics Letters B **786**, 432 (2018). [arXiv:1806.05840]

49. Karthik Rajeev, **Sumanta Chakraborty** and T. Padmanabhan, *A comment on generalized Schwinger effect*, European Physical Journal C **78**, 836 (2018). [arXiv:1712.06621]

50. Rabin Banerjee, **Sumanta Chakraborty** and Pradip Mukherjee, *Late-time acceleration driven by shift-symmetric Galileon in the presence of torsion*, Physical Review D **98**, 083506 (2018). [arXiv:1802.04150]

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53. Kinjalk Lochan, **Sumanta Chakraborty** and T. Padmanabhan, *Unruh effect for inertial observers through vacuum correlations*, European Physical Journal C **78**, 433 (2018). [arXiv:1603.01964]

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55. **Sumanta Chakraborty** and Soumitra SenGupta, *Packing extra mass in compact stellar structures: An interplay between Kalb-Ramond field and extra dimensions*, Journal of Cosmology and Astroparticle Physics **1805**, 032 (2018). [arXiv:1708.08315]

56. **Sumanta Chakraborty**, Kabir Chakravarti, Sukanta Bose and Soumitra SenGupta, *Signatures of extra-dimensions in gravitational waves from black hole quasi-normal modes*, Physical Review D **97**, 104053 (2018). [arXiv:1710.05188]

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Sumanta Chakraborty, *Field equations for Lovelock gravity: An alternative route*, Advances in High Energy Physics **2018**, 6509045 (2018). [arXiv:1704.07366]

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59. Indrani Banerjee, **Sumanta Chakraborty** and Soumitra SenGupta, *Excavating black hole continuum spectrum: Possible signatures of scalar hairs and of extra dimensions*, Physical Review D **96**, 084035 (2017). [arXiv:1707.04494]

60. Sourav Bhattacharya, **Sumanta Chakraborty** and T. Padmanabhan, *Entropy of a box of gas in an external gravitational field — revisited*, Physical Review D **96**, 084030 (2017). [arXiv:1702.08723]

61. Rabin Banerjee, **Sumanta Chakraborty**, Arpita Mitra and Pradip Mukherjee, *Cosmological implications of shift symmetric Galileon field*, Physical Review D **96**, 064023 (2017). [arXiv:1705.06941]

62. **Sumanta Chakraborty**, Krishnamohan Parattu and T. Padmanabhan, *A novel derivation of the boundary term for the action in Lanczos-Lovelock gravity*, General Relativity and Gravitation **49**, 121 (2017). [arXiv:1703.00624]

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65. [**Invited Review; Special Issue: Open Questions in Black Hole Physics**]
Sumanta Chakraborty and Kinjalk Lochan, *Black Holes: Eliminating Information or Illuminating New Physics?*, Universe **3**, 55 (2017). [arXiv:1702.07487]

66. Naresh Dadhich and **Sumanta Chakraborty**, *Buchdahl compactness limit for a pure Lovelock static fluid star*, Physical Review D **95**, 064059 (2017). [arXiv:1606.01330]

67. [**Book Chapter; Published in Gravity and the Quantum by Springer**]
Sumanta Chakraborty, *Boundary Terms of the Einstein-Hilbert Action*, Fundamental Theories of Physics, **187**, 43 (2017). [arXiv:1607.05986]

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72. [**Honorable mention by the Gravity Research Foundation**] **Sumanta Chakraborty** and Kinjalk Lochan, *Quantum leaps of black holes: Magnifying glasses of quantum gravity*, International Journal of Modern Physics D **25**, 1644024 (2016). [arXiv:1606.04348]

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