List of Publications

In Refereed Journals

- *Astrophysical Fluid Dynamics and Accretion Phenomena*

1. Ghosh, S., and **Mukhopadhyay, B.**, The competition between the hydrodynamic instability from noise and magnetorotational instability in the Keplerian disks - AIP Advances **12**, 055228, 2022; arXiv:2205.13230.
2. Datta, S., Mondal, T., and **Mukhopadhyay, B.**, Angular momentum transport and thermal stabilization of optically thin, advective accretion flows through large-scale magnetic fields - MNRAS **513**, 204, 2022; arXiv:2203.11965.
3. Ghosh, S., and **Mukhopadhyay, B.**, Forced linear shear flows with rotation: rotating Couette-Poiseuille flow, its stability and astrophysical implications - Astrophysical Journal **922**, 161, 2021; arXiv:2107.04012.
4. Ghosh, S., and **Mukhopadhyay, B.**, Origin of hydrodynamic instability from noise: from laboratory flow to accretion disk - Physical Review Fluids **6**, 013903, 2021; arXiv:2012.13417.
5. Ghosh, S., and **Mukhopadhyay, B.**, Hydrodynamical instability with noise in the Keplerian accretion discs: Modified Landau equation - Monthly Notices of Royal Astronomical Society **496**, 4191, 2020; arXiv:2006.10075.
6. Mondal, T., and **Mukhopadhyay, B.**, Role of magnetically dominated disc-outflow symbiosis on bright hard-state black hole sources: ultra-luminous X-ray sources to quasars - Monthly Notices of Royal Astronomical Society **495**, 350, 2020; arXiv:1910.08564.
7. Mondal, T., and **Mukhopadhyay, B.**, FSRQ/BL Lac dichotomy as the magnetized advective accretion process around black holes: a unified classification of blazars - Monthly Notices of Royal Astronomical Society **486**, 3465, 2019; arXiv:1904.05898.
8. Mondal, T., and **Mukhopadhyay, B.**, Ultra-luminous X-ray sources as magnetically powered sub-Eddington advective accretion flows around stellar mass black holes - Monthly Notices of Royal Astronomical Society Letters **482**, L24, 2019; arXiv:1808.10461.
9. Dhang, P., Sharma, P., and **Mukhopadhyay, B.**, Magnetized SASI: its mechanism and possible connection to some QPOs in XRBs - Monthly Notices of Royal Astronomical Society **476**, 3310, 2018; arXiv:1712.02367.
10. Mondal, T., and **Mukhopadhyay, B.**, Magnetized advective accretion flows: formation of magnetic barriers in Magnetically Arrested Discs - Monthly Notices of Royal Astronomical Society **476**, 2396, 2018; arXiv:1802.01594.
11. Nath, S. K., and **Mukhopadhyay, B.**, A pure hydrodynamic instability in shear flows and its application to astrophysical accretion disks - Astrophysical Journal **830**, 86, 2016; arXiv:1608.00980.
12. Singh Bhatia, T., and **Mukhopadhyay, B.**, Exploring nonnormality in magnetohydrodynamic rotating shear flows: application to astrophysical accretion disks - Physical Review Fluids **1**, 063101, 2016; arXiv:1609.01841.

13. Dhang, P., Sharma, P., and **Mukhopadhyay, B.**, Spherical accretion: the influence of inner boundary and quasi-periodic oscillations - Monthly Notices of Royal Astronomical Society **461**, 2426, 2016; arXiv:1604.08214.

14. Bhattacharya, D., Sreekumar, P., **Mukhopadhyay, B.** and Tomar, I, Does black hole spin play a key role in the FSRQ/BL Lac dichotomy? - Research in Astronomy and Astrophysics **16**, 54, 2016.

15. **Mukhopadhyay, B.**, General relativity and relativistic astrophysics - Current Science **109**, 2250, 2015; in a special section dedicated to 100 years of general relativity; arXiv:1609.01862.

16. Nath, S. K., and **Mukhopadhyay, B.**, Origin of nonlinearity and plausible turbulence by hydromagnetic transient growth in accretion disks: faster growth rate than magnetorotational instability - Physical Review E **92**, 023005, 2015; arXiv:1505.02874.

17. **Mukhopadhyay, B.** and Chatterjee, K., Hydromagnetics of advective accretion flows around black holes: Removal of angular momentum by large scale magnetic stresses - Astrophysical Journal **807**, 43, 2015; arXiv:1505.01281.

18. Nath, S. K., **Mukhopadhyay, B.** and Chattopadhyay, A. K., Magnetohydrodynamic stability of stochastically driven accretion flows - Physical Review E **88**, 013010, 2013; arXiv:1306.6190.

19. Das, U., **Mukhopadhyay, B.** and Rao, A. R., A possible evolutionary scenario of highly magnetized super-Chandrasekhar white dwarfs: progenitors of peculiar type Ia supernovae - Astrophysical Journal Letters **767**, 14, 2013; arXiv:1303.4298.

20. **Mukhopadhyay, B.**, Can the viscosity in astrophysical black hole accretion disks be close to its string theory bound? - Physics Letters B **721**, 151, 2013; arXiv:1204.1766.

21. **Mukhopadhyay, B.** and Chattopadhyay, A. K., Stochastically driven instability in rotating shear flows - Journal of Physics A: Mathematical and Theoretical **46**, 035501, 2013; arXiv:1211.5135.

22. **Mukhopadhyay, B.**, Bhattacharya, D. and Sreekumar, P., Observational evidences for spinning black holes: A proof of general relativity for spacetime around rotating black holes - International Journal of Modern Physics D **21**, 1250086, 2012; arXiv:1210.2441 *an invited paper for a special issue of Gravity Research Foundation, 2012.*

23. Sinha, A., and **Mukhopadhyay, B.**, Implications of a viscosity bound on black hole accretion - Physics Letters B **709**, 289, 2012; arXiv:1108.5177.

24. **Mukhopadhyay, B.** and Dutta, P., Variation of the gas and radiation content in the sub-Keplerian accretion disk around black - New Astronomy **17**, 51, 2012; arXiv:1204.1274.

25. **Mukhopadhyay, B.**, Mathew, R. and Raha, S., Growing pseudo-eigenmodes and positive logarithmic norms in rotating shear flows - New Journal of Physics **13**, 023029, 2011; arXiv:1101.4608.

26. **Mukhopadhyay, B.**, and Saha, K., Possible origin of viscosity in the Keplerian accretion disks due to secondary perturbation: Turbulent transport without magnetic field - Research in Astronomy and Astrophysics **11**, 163, 2011; arXiv:1101.4613.

27. Bhattacharya, D., Ghosh, S. and **Mukhopadhyay, B.**, Disk-outflow coupling: Energetics around spinning black holes - Astrophysical Journal **713**, 105, 2010; arXiv:0911.3049.

28. Rajesh, S. R. and **Mukhopadhyay, B.**, Two temperature accretion around rotating black holes: Description of general advective flow paradigm in presence of various cooling processes to explain low to high luminous sources - Monthly Notices of Royal Astronomical Society **402**, 961, 2010; arXiv:0910.4502.

29. Rajesh, S. R. and **Mukhopadhyay, B.**, Two temperature viscous accretion flows around rotating black holes: Description of under-fed systems to ultra-luminous X-ray sources - New Astronomy **15**, 283, 2010; arXiv:0908.3956.

30. Ghosh, S. and **Mukhopadhyay, B.**, Krishan, V. and Khan M., Description of accretion induced outflows from ultra-luminous sources to under-luminous AGNs - New Astronomy **15**, 83, 2010; arXiv:0906.0149.

31. Sinha, M., Rajesh, S. R. and **Mukhopadhyay, B.**, Transition from radiatively inefficient to cooling dominated phase in two temperature accretion discs around black holes - Research in Astronomy and Astrophysics **9**, 1331, 2009; arXiv:0910.4818.

32. **Mukhopadhyay, B.**, Higher order nonlinearity in accretion disks: QPOs of black hole and neutron star sources and their spin - Astrophysical Journal **694**, 387, 2009; arXiv:0811.2033.

33. Ghosh, S. and **Mukhopadhyay, B.**, 2.5-dimensional solution of the advective accretion disk: A self-similar approach - Research in Astronomy and Astrophysics **9**, 157, 2009; arXiv:0811.4705.

34. **Mukhopadhyay, B.**, Estimate of the Shakura-Sunyaev viscosity parameter in the Keplerian accretion disk from hydrodynamic turbulence - International Journal of Modern Physics **D 17**, 467, 2008 (An invited article for a special issue for Gravity Research Foundation 2007).

35. Ghosh S. and **Mukhopadhyay, B.**, Generalized pseudo-Newtonian potential for studying accretion disk dynamics in off-equatorial planes around rotating black holes: Description of a vector potential - Astrophysical Journal **667**, 367, 2007; arXiv:0706.2221.

36. **Mukhopadhyay, B.**, Growing hydrodynamic modes in Keplerian accretion disks during secondary perturbations: Elliptical vortex effects - Astrophysical Journal **653**, 503, 2006; astro-ph/0608402.

37. **Mukhopadhyay, B.**, Afshordi, N. and Narayan, R., Bypass to turbulence in hydrodynamic accretion disks: An eigenvalue analysis - Astrophysical Journal **629**, 383, 2005; astro-ph/0412193.

38. Afshordi, N., **Mukhopadhyay, B.** and Narayan, R., Bypass to turbulence in hydrodynamic accretion disks: Lagrangian analysis of energy growth - Astrophysical Journal **629**, 373, 2005; astro-ph/0412194.

39. **Mukhopadhyay, B.** and Ghosh, S., Global solution of viscous accretion disk around rotating compact objects: a pseudo-general relativistic study - Mon. Not. Roy. Astron. Soc. **342**, 274, 2003; astro-ph/0304157.

40. **Mukhopadhyay, B.**, Ray, S., Dey, J. and Dey, M., Origin and interpretation of kilohertz QPOs from strange stars in X-ray binary system: Theoretical hydrodynamical description - Astrophysical Journal Letters **584**, 83, 2003; astro-ph/0211611.

41. **Mukhopadhyay, B.**, Stability of accretion disk around rotating black holes: a pseudo-general-relativistic fluid dynamical study - Astrophysical Journal **586**, 1268, 2003; astro-ph/0212186.

42. Prasanna, A. R. and **Mukhopadhyay, B.**, Effect of Coriolis force on Accretion Flows around Rotating Compact Object - International Journal of Modern Physics D **12**, 157, 2003; astro-ph/0107119.

43. **Mukhopadhyay, B.** and Misra, R., Pseudo-Newtonian potentials to describe the temporal effects on relativistic accretion disk around rotating black holes and neutron stars - Astrophysical Journal **582**, 347, 2003; astro-ph/0209042.

44. **Mukhopadhyay, B.**, Description of pseudo-Newtonian potential for the relativistic accretion disk around Kerr black holes - Astrophysical Journal **581**, 427, 2002; astro-ph/0205475.

45. **Mukhopadhyay, B.**, Hydrodynamical Study of Advective Accretion flow around Neutron Stars - International Journal of Modern Physics D **11**, 1305, 2002; astro-ph/0203438.

• *Stellar Physics and Gravitation*

46. Das, A. R., and **Mukhopadhyay, B.**, Asymptotically flat vacuum solution for a rotating black hole in a modified gravity theory - European Physical Journal C *Accepted for publication* 2022; arXiv:2203.07690.

47. Chakraborty, C., and **Mukhopadhyay, B.**, Spin precession in the gravity wave analogue black hole spacetime - Universe **8**, 193, 2022; arXiv:2203.11459.

48. Bhattacharya, M., Hackett, A. J., Gupta, A., Tout, C. A. and **Mukhopadhyay, B.**, Evolution of highly magnetic white dwarfs by field decay and cooling: theory and simulations - Astrophysical Journal **925**, 133, 2022; arXiv:2106.09736.

49. Deb, D., **Mukhopadhyay, B.** and Weber, F., Anisotropic magnetized white dwarfs: Unifying under- and over-luminous peculiar and standard type Ia supernovae - Astrophysical Journal **926**, 66, 2022; arXiv:2112.03938.

50. Deb, D., **Mukhopadhyay, B.** and Weber, F., Effects of anisotropy on strongly magnetized neutron and strange quark stars in general relativity - Astrophysical Journal **922**, 149, 2021; arXiv:2108.12436.

51. Kalita, S., Mondal, T., Tout, C. A., Bulik, T. and **Mukhopadhyay, B.**, Resolving dichotomy in compact objects through continuous gravitational waves observation - MNRAS **508**, 842, 2021; arXiv:2109.06246.

52. Sharma, A., and **Mukhopadhyay, B.**, Modified Newtonian Gravity: Explaining observations of sub- and super-Chandrasekhar limiting mass white dwarfs - Scientific Voyage **2**, 20, 2021; arXiv:2105.01702.

53. Kalita, S., and **Mukhopadhyay, B.**, Gravitational wave in $f(R)$ gravity: possible signature of sub- and super-Chandrasekhar limiting mass white dwarfs - Astrophysical Journal **909**, 65, 2021; arXiv:2101.07278.

54. Kalita, S., **Mukhopadhyay, B.**, and Govindarajan, T. R., Violation of Chandrasekhar mass-limit in noncommutative geometry: A strong possible explanation for the super-Chandrasekhar limiting mass white dwarfs - International Journal of Modern Physics D **30**, 2150034, 2021; arXiv:1912.00900.

55. **Mukhopadhyay, B.**, Sarkar, A., and Tout, C. A., Modified virial theorem for highly magnetized white dwarfs - Monthly Notices of Royal Astronomical Society **500**, 763, 2021; arXiv:2010.04177.

56. Gupta, A., **Mukhopadhyay, B.**, and Tout, C. A., Suppression of luminosity and mass-radius relation of highly magnetized white dwarfs - Monthly Notices of Royal Astronomical Society **496**, 894, 2020; arXiv:2006.02449.

57. Kalita, S., **Mukhopadhyay, B.**, Mondal, T, and Bulik, T., Timescales for detection of super-Chandrasekhar white dwarfs by gravitational wave astronomy - Astrophysical Journal **896**, 69, 2020; arXiv:2004.13750.

58. Kalita, S., and **Mukhopadhyay, B.**, Asymptotically flat vacuum solution in modified theory of Einsteins gravity - European Physical Journal C **79**, 877, 2019; arXiv:1910.06564.

59. Kalita, S., and **Mukhopadhyay, B.**, Continuous gravitational wave from magnetized white dwarfs and neutron stars: possible missions for LISA, DECIGO, BBO, ET detectors - Monthly Notices of the Royal Astronomical Society **490**, 2692, 2019; arXiv:1905.02730.

60. Kalita, S., and **Mukhopadhyay, B.**, Modified Einstein's gravity to probe the sub- and super-Chandrasekhar limiting mass white dwarfs: a new perspective to unify under- and over-luminous type Ia supernovae - Journal of Cosmology and Astroparticle Physics **09**, 007, 2018; arXiv:1805.12550.

61. Bhattacharya, M., **Mukhopadhyay, B.**, and Mukerjee, S., Luminosity and cooling of highly magnetized white dwarfs: Suppression of luminosity by strong magnetic fields - Monthly Notices of the Royal Astronomical Society **477**, 2705, 2018; arXiv:1509.00936.

62. **Mukhopadhyay, B.**, Rao, A. R., and Bhatia, T. S., AR Sco as a possible seed of highly magnetized white dwarf - Monthly Notices of Royal Astronomical Society **472**, 3564, 2017; arXiv: 1708.04413.

63. **Mukhopadhyay, B.**, and Rao, A. R., Soft gamma-ray repeaters and anomalous X-ray pulsars as highly magnetized white dwarfs - Journal of Cosmology and Astroparticle Physics **05**, 007, 2016; arXiv:1603.00575.

64. Das, U., and **Mukhopadhyay, B.**, Imprint of modified Einstein's gravity on white dwarfs: Unifying type Ia supernovae - International Journal of Modern Physics D **24**, 1544026, 2015; *in a special issue for the papers appeared for the Gravity Research Foundation essay competition, 2015*; arXiv:1506.02779.

65. Subramaninan, S., and **Mukhopadhyay, B.**, GRMHD formulation of highly super-Chandrasekhar rotating magnetised white dwarfs: Stable configurations of non-spherical white dwarfs - Monthly Notices of Royal Astronomical Society **454**, 752, 2015; arXiv:1507.01606.

66. Das, U., and **Mukhopadhyay, B.**, GRMHD formulation of highly super-Chandrasekhar magnetized white dwarfs: Stable configurations of non-spherical white dwarfs - Journal of Cosmology and Astroparticle Physics **05**, 016, 2015; arXiv:1411.5367.

67. Das, U., and **Mukhopadhyay, B.**, Modified Einstein's gravity as a missing link between sub- and super-Chandrasekhar type Ia supernovae - Journal of Cosmology and Astroparticle Physics **05**, 045, 2015; arXiv:1411.1515.

68. Bhattacharya, M., Dadhich, N., and **Mukhopadhyay, B.**, Study of motion around a static black hole in Einstein and Lovelock gravity - Physical Review D **91**, 064063, 2015; arXiv:1412.4013.

69. Das, U., and **Mukhopadhyay, B.**, Reply to "Comment on Strongly magnetized cold degenerate electron gas: Mass-radius relation of the magnetized white dwarf'" - Physical Review D **91**, 028302, 2015; arXiv:1406.0948.

70. Das, U., and **Mukhopadhyay, B.**, Maximum mass of stable magnetized highly super-Chandrasekhar white dwarfs: stable solutions with varying magnetic fields - Journal of Cosmology and Astroparticle Physics **06**, 050, 2014; arXiv:1404.7627.

71. Das, U., and **Mukhopadhyay, B.**, Revisiting some physics issues related to the new mass limit for magnetized white dwarfs - Modern Physics Letters A **29**, 1450035, 2014; arXiv:1304.3022.

72. Das, U., and **Mukhopadhyay, B.**, New mass limit of white dwarfs - International Journal of Modern Physics D **22**, 1342004, 2013; *in a special issue for the papers appeared for the Gravity Research Foundation essay competition, 2013*; arXiv:1305.3987.

73. Banerjee, I., and **Mukhopadhyay, B.**, Establishing a relation between mass and spin of stellar mass black holes - Physical Review Letters **111**, 061101, 2013; arXiv:1307.4075.

74. Das, U., and **Mukhopadhyay, B.**, New mass limit for white dwarfs: super-Chandrasekhar type Ia supernova as a new standard candle - Physical Review Letters **110**, 071102, 2013; arXiv:1301.5965.

75. Das, U., and **Mukhopadhyay, B.**, Strongly magnetized cold electron degenerate gas: mass-radius relation of the magnetized white dwarf - Physical Review D **86**, 042001, 2012; arXiv:1204.1262.

76. Das, U., and **Mukhopadhyay, B.**, Violation of Chandrasekhar mass limit: the exciting potential of strongly magnetized white dwarfs - International Journal of Modern Physics D **21**, 1242001, 2012; *in a special issue for the papers appeared for the Gravity Research Foundation essay competition, 2012*; arXiv:1205.3160.

77. Kundu, A., and **Mukhopadhyay, B.**, Mass of highly magnetized white dwarfs exceeding the Chandrasekhar limit: An analytical view - Modern Physics Letters A **27**, 1250084, 2012; arXiv:1204.1463.

78. Biswas, R., Chakraborty, S., Saini, T. D., **Mukhopadhyay, B.**, Accretion of Chaplygin gas upon black holes: Formation of faster outflowing winds - Classical and Quantum Gravity **28**, 035005, 2011; arXiv:1101.4602.

79. **Mukhopadhyay, B.** and Prasanna, A. R., Fluid flow and inertial forces in black hole space times - International Journal of Modern Physics A **18**, 1091, 2003; gr-qc/0110022.

80. Dhara, H. C. and **Mukhopadhyay, B.**, Exact String configurations in Worm-Hole background - Il Nuovo Cimento B **116**, 937, 2001.

- *Investigation of Spinor and Electromagnetic Fields in Curved Space-time*

81. Aggarwal, S., Banerjee, S., Ghosh, A. and **Mukhopadhyay, B.**, Non-uniform magnetic field as a booster for quantum speed: faster quantum information processingn - New J. Phys. *Accepted for publication* 2022; arXiv:2112.04519.

82. Kumar, A. and **Mukhopadhyay, B.**, Covariant formalism for the Berry connection due to gravity - Scientifc Voyage **3**, 19, 2022.

83. Aggarwal, S., **Mukhopadhyay, B.** and Gregori, G., Relativistic Landau quantization in non-uniform magnetic field and its applications to white dwarfs and quantum information - SciPost Physics **11**, 093, 2021; arXiv:2110.09543.

84. Ghosh, T. and **Mukhopadhyay, B.**, Geometric phase for Dirac Hamiltonian under gravitational fields in the non-relativistic regime - International Journal of Modern Physics D **30**, 2150090-417, 2021; arXiv:2010.05945.

85. **Mukhopadhyay, B.** and Ghosh, K., Separation of the Dirac equation in the 3 + 1 dimensional constant curvature black hole background and its solution - Classical and Quantum Gravity **25**, 065006, 2008; arXiv:0801.3879.

86. **Mukhopadhyay, B.** and Dadhich, N., Scalar and Spinor perturbation to the Kerr-NUT space-time - Classical and Quantum Gravity **21**, 3621, 2004; gr-qc/0301104.

87. **Mukhopadhyay, B.**, Dynamics of electromagnetic waves in Kerr geometry - Classical and Quantum Gravity **19**, 2307, 2002; gr-qc/0202050.

88. Chakrabarti, S. K. and **Mukhopadhyay, B.**, Dirac Equation in Kerr Geometry and its Solution - Il Nuovo Cimento B **115**, 885, 2000; astro-ph/0007253.

89. Chakrabarti, S. K. and **Mukhopadhyay, B.**, Scattering of Dirac Waves off Quantum Black Holes - Mon. Not. Roy. Astron. Soc. **317**, 979, 2000; astro-ph/0007277.

90. **Mukhopadhyay, B.**, Behaviour of spin-half particle around a charged black hole - Classical and Quantum Gravity **17**, 2017, 2000; gr-qc/0003061.

91. **Mukhopadhyay, B.** and Chakrabarti, S. K., Solution of Dirac equation around a spinning black hole - Nuclear Physics B **582**, 627, 2000; gr-qc/0007016.

92. **Mukhopadhyay, B.**, Dirac equation in Kerr Geometry - Indian Journal of Physics **73B (6)**, 855, 1999; gr-qc/9910018.

93. **Mukhopadhyay, B.** and Chakrabarti, S. K., Semi-analytical Solution of Dirac equation in Schwarzschild Geometry - Classical and Quantum Gravity **16**, 3165, 1999; gr-qc/9907100.

- *Astrophysical Data Analysis*

94. Adegoke, O., **Mukhopadhyay, B.** and Misra, R., Correlating nonlinear time series and spectral properties of IGR J17091-3624: Is it similar to GRS 1915+105? - Monthly Notices of Royal Astronomical Society **492**, 4033, 2020; arXiv:2001.01732.

95. Bachev, R., Strigachev, A. and **Mukhopadhyay, B.**, Searching for deterministic chaos in Kepler light curve of the Seyfert 1 AGN Zw229-015 - Bulgarian Astronomical Journal **29**, 74, 2018.

96. Adegoke, O., Dhang, P., **Mukhopadhyay, B.**, Ramadevi, M. C., and Bhattacharya, D., Correlating nonlinear properties with spectral states of RXTE data: Possible observational evidences for four different accretion modes around compact objects - Monthly Notices of Royal Astronomical Society **476**, 1581, 2018; arXiv:1801.08552.

97. Adegoke, O., Rakshit, S. and **Mukhopadhyay, B.**, Spectral and Time Series Analyses of the Seyfert 1 AGN: Zw 229.015 - Monthly Notices of Royal Astronomical Society **466**, 3951, 2017; arXiv:1612.06817.

98. Bachev, R., **Mukhopadhyay, B.**, and Strigachev, A., A search for chaos in the optical light curve of a blazar: W2R 1926+42 - Astronomy and Astrophysics **576**, A17, 2015; arXiv:1501.01245.

99. Karak, B. B., Dutta, J., **Mukhopadhyay, B.**, Search for chaos in neutron star systems: Is Cyg X-3 a black hole? - Astrophysical Journal **708**, 862, 2010; arXiv:0911.1701.

100. Misra, R., Harikrishnan, K. P., **Mukhopadhyay, B.**, Ambika, G., and Kembhavi, A. K., The chaotic behaviour of the black hole system GRS 1915+105 - Astrophysical Journal **609**, 313, 2004; astro-ph/0403144.

- *Field Theory in Curved Space-time and Related Particle Physics*

101. Kalita, S. and **Mukhopadhyay, B.**, Massive Neutron Stars and White Dwarfs as Noncommutative Fuzzy Spheres - Universe **8**, 388, 2022; arXiv:2207.07667.

102. Kalita, S., Govindarajan, T. R. and **Mukhopadhyay, B.**, Super-Chandrasekhar limiting mass white dwarfs as emergent phenomena of noncommutative squashed fuzzy spheres - International Journal of Modern Physics D **30**, 2150101, 2021; arXiv:2101.06272.

103. **Mukhopadhyay, B.** and Ganguly, S. K., Gravity-Induced Geometric Phases and Entanglement in Spinors and Neutrinos: Gravitational Zeeman Effect - Universe **6**, 160, 2020; arXiv:1802.10377.

104. Dixit, K., Naikoo, J., **Mukhopadhyay, B.** and Banerjee, S., Quantum correlations in neutrino oscillations in curved spacetime - Physical Review D **100**, 055021, 2019; arXiv:1903.05664.

105. Sinha, M. and **Mukhopadhyay, B.**, CPT and lepton number violation in neutrino sector: Modified mass matrix and oscillation due to gravity - Physical Review D **77**, 025003, 2008; arXiv:0704.2593.

106. **Mukhopadhyay, B.**, Gravity induced neutrino-antineutrino oscillation: CPT and lepton number non-conservation under gravity - Classical and Quantum Gravity **24**, 1433, 2007; gr-qc/0702062.

107. Debnath, U., **Mukhopadhyay, B.** and Dadhich, N., Space-time curvature coupling of spinors in early universe: Neutrino asymmetry and a possible source of baryogenesis - Modern Physics Letters A **21**, 399, 2006; hep-ph/0510351.

108. **Mukhopadhyay, B.**, Neutrino asymmetry around black holes: Neutrinos interact with gravity - Modern Physics Letters A **20**, 2145, 2005; astro-ph/0505460.

109. **Mukhopadhyay, B.** and Singh, P., Neutrino-Antineutrino asymmetry around black hole - Pramana **62**, 775, 2004.

110. Singh, P. and **Mukhopadhyay, B.**, Gravitationally induced neutrino asymmetry - Modern Physics Letters A **18**, 779, 2003.

111. Mohanty, S., **Mukhopadhyay, B.** and Prasanna, A. R., Experimental tests of curvature couplings of fermions in General Relativity - Physical Review D **65**, 122001, 2002; hep-ph/0201172.

- *Nuclear Astrophysics*

112. Datta, S. R., and **Mukhopadhyay, B.**, Nucleosynthesis in advective disc and outflow: possible explanation for overabundances in winds from X-ray binaries - MNRAS **486**, 1641, 2019; arXiv:1904.01592.

113. Vishal, M. V., and **Mukhopadhyay, B.**, Revised density of magnetized nuclear matter at the neutron drip line - Physical Review C **89**, 065804, 2014; arXiv:1403.0763.

114. **Mukhopadhyay, B.**, Comment on "Lithium synthesis in microquasar accretion" - Physical Review Letters **112**, 229001, 2014.

115. Banerjee, I., and **Mukhopadhyay, B.**, Nucleosynthesis in the outflows associated with accretion disks of Type II collapsars - Astrophysical Journal **778**, 8, 2013; arXiv:1309.0954.

116. Banerjee, I., and **Mukhopadhyay, B.**, Nucleosynthesis in the accretion disks of Type II collapsars - Research in Astronomy and Astrophysics **13**, 1063, 2013; arXiv:1305.1755.

117. Sinha, M., **Mukhopadhyay, B.** and Sedrakian, A., Hypernuclear matter in strong magnetic field - Nuclear Physics A **898**, 43, 2013; arXiv:1005.4995.

118. Cooper, R., **Mukhopadhyay, B.**, Steeghs, D. and Narayan, R., On the production and survival of carbon fuel for superbursts on accreting neutron stars: Implications for mass donor evolution - Astrophysical Journal **642**, 443, 2006; astro-ph/0508194.

119. **Mukhopadhyay, B.** and Chakrabarti, S. K., Stability of Accretion Disks in Presence of Nuclear Reactions - Astrophysical Journal **555**, 816, 2001; astro-ph/0103230.

120. **Mukhopadhyay, B.** and Chakrabarti, S. K., Nucleosynthesis in Accretion Flows around Black Holes - Astronomy and Astrophysics **353**, 1029, 2000; astro-ph/9912568.

121. Chakrabarti, S. K. and **Mukhopadhyay, B.**, Neutron Disks Around Black Holes - Astronomy and Astrophysics **344**, 105, 1999; astro-ph/9904342.

122. **Mukhopadhyay, B.**, Nucleosynthesis around Black Holes - Indian Journal of Physics **73B (6)**, 917, 1999; astro-ph/9910080.

In Proceedings

- *Astrophysical Fluid Dynamics and Accretion Phenomena*

123. Ghosh, S. and **Mukhopadhyay, B.**, Hydrodynamical transport of angular momentum in accretion disks in the presence of nonlinear perturbations due to noise - Proceedings of 16th Marcel Grossmann Meeting, Online, 2021; arXiv:2111.08724.

124. **Mukhopadhyay, B.**, Model of a Disk-Outflow Coupled System: Disk-Outflow Symbiosis - Proceedings of 13th Marcel Grossmann Meeting, Stockholm, 2012, Edited by K. Rosquist, R. T. Jantzen and R. Ruffini. Singapore: World Scientific, p.2395, 2014; arXiv:1302.3443.

125. **Mukhopadhyay, B.**, Does black hole spin play a key role in the FSRQ/BL Lac dichotomy? - Proceedings of 13th Marcel Grossmann Meeting, Stockholm, 2012, Edited by K. Rosquist, R. T. Jantzen and R. Ruffini. Singapore: World Scientific, p.1019, 2014; arXiv:1302.3442.

126. **Mukhopadhyay, B.** and Chattopadhyay, A. K., Stochastically driven instabilities in accretion flows - Proceedings of International Conference on Astrophysics & Cosmology, Central Department of Physics, Tribhuvan University, Kirtipur, Nepal, 2012.

127. **Mukhopadhyay, B.**, Two temperature accretion flows around rotating black holes and determining the kerr parameter of sources - Proceedings of 12th Marcel Grossmann Meeting, Paris, 2009; arXiv:1101.4626.

128. **Mukhopadhyay, B.**, Predicting spin of compact objects from their QPOs: A global QPO model - Proceedings of Second Kolkata Conference on Observational Evidences for Black Holes in the Universe, Kolkata, February 10-15, 2008; AIP Conf. Proc. **1053**, 343, 2008; arXiv:0809.3336.

129. **Mukhopadhyay, B.**, Transonic properties of the accretion disk around compact objects - Proceedings of First Kodai-Trieste Workshop on Plasma Astrophysics in Kodaikanal Observatory, Indian Institute of Astrophysics, Kodaikanal, India, August 27 to September 7, 2007.

130. **Mukhopadhyay, B.**, Secondary Perturbation Effects in Keplerian Accretion Disks: Elliptical Instability - Proceedings of 11th Marcel Grossmann Meeting, Berlin, 2006; astro-ph/0703201.

131. **Mukhopadhyay, B.**, Afshordi, N. and Narayan, R., Growth of hydrodynamic perturbations in accretion disks: Possible route to non-magnetic turbulence - Proceedings of COSPAR Colloquium on Spectra and Timing of Compact X-ray Binaries, Tata Institute of Fundamental Research, Mumbai, India, January 17-21, 2005; Advances in Space Research **38**, 2877, 2006; astro-ph/0507046.

132. **Mukhopadhyay, B.**, Afshordi, N. and Narayan, R., Hydrodynamic turbulence in accretion disks - Proceedings of 22nd Texas Symposium, Stanford, 2004, eConf C041213:1609, 2004; astro-ph/0501468.

133. **Mukhopadhyay, B.**, Effect of Coriolis force on accretion flows in LMXB systems - Proceedings of American Astronomical Society, HEAD meeting, New Orleans, Louisiana, September 8-11, 2004.

134. **Mukhopadhyay, B.**, Stability of accretion disk around rotating black holes - Proceedings of 10th Marcel Grossmann Meeting, Rio de Janeiro, 2003; astro-ph/0402178.

135. **Mukhopadhyay, B.**, Ray, S., Dey., J. and Dey, M., Theoretical Description of kHz QPOs in accreting LMXB systems - Proceedings of 10th Marcel Grossmann Meeting, Rio de Janeiro, 2003; astro-ph/0402179.

136. **Mukhopadhyay, B.**, Stability of accretion disk around rotating black holes - Proceedings (online electronic) of PARTICLE ACCELERATION IN ASTROPHYSICAL OBJECTS, Cracow, June 24-28, 2003, Eds. M. Ostrowski, M. Sikora, Astronomical Observatory of the Jagiellonian University, Cracow, Poland (http://www.oa.uj.edu.pl/konferencje/proc0.html).

137. Prasanna, A. R. and **Mukhopadhyay, B.**, Advection Dominated Flows Around a Rotating Compact Object - Proceedings of 16th International Conference on General Relativity and Gravitation, Durban, South Africa, 2001.

- *Stellar Physics and Gravitation*

138. **Mukhopadhyay, B.**, Bhattacharya, M., Hackett, A. J., Kalita, S., Karinkuzhi, D. and Tout, C. A. Highly magnetized white dwarfs: implications and current status - Proceedings of 16th Marcel Grossmann Meeting, Online, 2021; arXiv:2110.15374.

139. Kalita, S. and **Mukhopadhyay, B.**, Asymptotically flat black hole solution in modified gravity - Proceedings of 16th Marcel Grossmann Meeting, Online, 2021; arXiv:2111.05873.

140. **Mukhopadhyay, B.**, Significantly super-Chandrasekhar limiting mass white dwarfs as progenitors for peculiar over-luminous type Ia supernovae - Proceedings of 12th Conference on the Intersections of Particle and Nuclear Physics (CIPANP), 2015.

141. **Mukhopadhyay, B.** and Sinha, M., Constraining the central magnetic field of magnetars - Proceedings of 13th Marcel Grossmann Meeting, Stockholm, 2012, Edited by K. Rosquist, R. T. Jantzen and R. Ruffini. Singapore: World Scientific, p.2307, 2014; arXiv:1302.3444.

142. Das, U. and **Mukhopadhyay, B.**, Strongly magnetized cold electron degenerate gas: mass-radius relation of the magnetized white dwarf - Proceedings of 13th Marcel Grossmann Meeting, Stockholm, 2012, Edited by K. Rosquist, R. T. Jantzen and R. Ruffini. Singapore: World Scientific, p.2478, 2014; arXiv:1302.5763.

143. Das, U., and **Mukhopadhyay, B.**, Strongly Magnetized Electron Degenerate Gas: mass-radius relation of the collapsed star - Proceedings of International Conference on Astrophysics & Cosmology, Central Department of Physics, Tribhuvan University, Kirtipur, Nepal, 2012.

- *Black Hole Thermodynamics*

144. **Mukhopadhyay, B.** and Ghosh, K., Entropy of spinor fields in 3+1 dimensional constant curvature black hole background - Proceedings of 22nd Texas Symposium, Stanford, 2004.

- *Investigation of Spinor and Electromagnetic Fields in Curved Space-time*

145. **Mukhopadhyay, B.**, Ghosh, T. and Ganguly S. K., Gravitational geometric phase - Proceedings of 16th Marcel Grossmann Meeting, Online, 2021; arXiv:2111.03277.

146. **Mukhopadhyay, B.** and Dadhich, N., Scalar and spinor perturbation to the most generalised Kerr-NUT space-time - Proceedings of 10th Marcel Grossmann Meeting, Rio de Janeiro, 2003; gr-qc/0401094.

147. **Mukhopadhyay, B.**, Behaviour of spin-1/2 particle in curved space-time - Proceedings of 9th Marcel Grossmann Meeting, Rome, 2000; gr-qc/0103034.

148. **Mukhopadhyay, B.** and Chakrabarti, S. K., The Complete Solution of Dirac Equation in Kerr Geometry - Proceedings of 'Mini Workshop on Applied Mathematics, Shyllet, Bangladesh, September 1-3, 1998'.

- *Astrophysical Data Analysis*

149. **Mukhopadhyay, B.**, Chaotic behaviour of micro quasar GRS 1915+105 - Proceedings of X-Ray Timing 2003: Rossi and Beyond, ed. P. Kaaret, F. K. Lamb, and J. H. Swank (Melville, NY: American Institute of Physics), November 3-5, 2003, Harvard-Smithsonian Center for Astrophysics, AIP Conf. Proc. **714**, 48, 2004; astro-ph/0402222.

- *Field Theory in Curved Space-time and Related Particle Physics*

150. Kalita, S., Govindarajan, T. R. and **Mukhopadhyay, B.**, Natural evidence for fuzzy sphere noncommutative geometry: super-Chandrasekhar white dwarfs - Proceedings of 16th Marcel Grossmann Meeting, Online, 2021; arXiv:2111.05878.

151. **Mukhopadhyay, B.**, Lorentz Symmetry Violation in Neutrinos in Curved Spacetime and its Consequences Proceedings of 12th Marcel Grossmann Meeting, Paris, 2009; arXiv:1101.4628.

152. **Mukhopadhyay, B.**, Possible neutrino-antineutrino oscillation under gravity and its consequences - Proceedings of 11th Marcel Grossmann Meeting, Berlin, 2006; gr-qc/0701077.

153. **Mukhopadhyay, B.**, Neutrino asymmetry in presence of gravitational interaction - Proceedings of 10th Marcel Grossmann Meeting, Rio de Janeiro, 2003; gr-qc/0401095.

- *Nuclear Astrophysics*

154. Banerjee, I. and **Mukhopadhyay, B.**, Nucleosynthesis in the gamma-ray burst accretion disks and associated outflows - Proceedings of 13th Marcel Grossmann Meeting, Stockholm, 2012, Edited by K. Rosquist, R. T. Jantzen and R. Ruffini. Singapore: World Scientific, p.1773, 2014; arXiv:1302.3067.

155. **Mukhopadhyay, B.**, Nucleosynthesis in accretion disk around compact object - Proceedings of 9th Marcel Grossmann Meeting, Rome, 2000; astro-ph/0103162.

156. **Mukhopadhyay, B.**, Nucleosynthesis in Advective Accretion Disk around Galactic and Extra-Galactic Black Holes - Proceedings of International Workshop 'The Observational Evidences For Black Hole, Calcutta, January 1-17, 1998', Ed. S. K. Chakrabarti, Kluwer Academic Press; astro-ph/9807106.

In Book/Edited Volume

1. **Mukhopadhyay, B.** and Sasmal, S., Exploring the Universe: From Near Space to Extra-Galactic, Springer, 2018.
2. **Mukhopadhyay, B.** and Singh, T. P., *Special Section* of Current Science dedicated to 100 Years of General relativity; Current Science **109**, 25th December, 2015.

In Popular Magazine/Newspaper/Book-Review

1. **Mukhopadhyay, B.**, Review of "Einstein Rediscovered: Interactions with Indian Academics. Rajinder Singh. Shaker Verlag GmbH, Am Lagen Graben 15a, 52353, Düren. 2019" - Current Science, 118, 1998, 2020.
2. Das, U. and **Mukhopadhyay, B.**, An article "New Mass Limit for White Dwarfs: Explains Super-Chandrasekhar Type Ia Supernovae" in a popular-science magazine *2Physics*, on 24th February, 2013.
3. **Mukhopadhyay, B.**, An article "Hole's A Heady Brew" in a newspaper *The Telegraph*, India on 17th January, 2000.
4. **Mukhopadhyay, B.**, Nucleosynthesis around a Black Hole - Universe and Beyond, 1999.

Papers in math-ph Archive

1. **Mukhopadhyay, B.**, Instantaneous Reflection and transmission coefficients and a special method to solve wave equation; math-ph/9908011.
2. **Mukhopadhyay, B.**, Raychaudhuri, S., Difference in the number of operators between coupled and uncoupled basis for the general SU(n) Lie algebra; math-ph/9906025.

In Abstract Proceedings

1. **Mukhopadhyay, B.**, Pseudo-Newtonian Potential and its Application in Accretion Disk around Rotating Compact Objects - 22nd Meeting of the Indian Association for General Relativity and Gravitation, IUCAA, Pune, India, December 11-14, 2002.
2. **Mukhopadhyay, B.**, Stability of accretion disk in presence of Nucleosynthesis - 16th International Conference on General Relativity and Gravitation, Durban, South Africa, July 15-21, 2001.
3. **Mukhopadhyay, B.**, Nucleosynthesis in Accretion Disk around Black Holes - Indian Science Congress, 2001.
4. **Mukhopadhyay, B.**, Space Dependent Reflection and Transmission Coefficients - Indian Science Congress, 2000.
5. **Mukhopadhyay, B.**, The Method to Solve the Non-analytic Differential Equation Analytically - Indian Science Congress, 1999.

6. **Mukhopadhyay, B.** and Chakrabarti, S. K., Solution of Dirac Equation in Kerr Geometry - 19th Texas Symposium on Relativistic Astrophysics and Cosmology, held in Paris, France, December 14-18, 1998, Eds.: J. Paul, T. Montmerle, and E. Aubourg (CEA Saclay).

7. **Mukhopadhyay, B.** and Chakrabarti, S. K., Nucleosynthesis in Advective Accretion Disks Around Black Holes - 19th Texas Symposium on Relativistic Astrophysics and Cosmology, held in Paris, France, December 14-18, 1998, Eds.: J. Paul, T. Montmerle, and E. Aubourg (CEA Saclay).

8. **Mukhopadhyay, B.** and Raychaudhuri, S., Rules for Difference of Number of Complete and Non-Complete Set of Operators in a Particular Representation - Indian Science Congress, 1998.