

List of papers from CCSP

2024:

“Single field inflation in the light of Pulsar Timing Array Data: quintessential interpretation of blue tilted tensor spectrum through Non-Bunch Davies initial condition”, Sayantan Choudhury, *Eur.Phys.J.C 84 (2024) 3, 278.*

“Primordial non-Gaussianity from ultra slow-roll Galileon inflation”, Sayantan Choudhury, Ahaskar Karde, Sudhakar Panda, M. Sami, *JCAP 01 (2024) 012.*

“Entanglement negativity in de Sitter biverse from Stringy Axionic Bell pair: An analysis using Bunch-Davies vacuum”, Sayantan Choudhury, *Fortsch.Phys. 72 (2024) 1, 2300063.*

“Induced Gravitational Waves via Warm Natural Inflation”, Miguel Correa, Mayukh R. Gangopadhyay, Nur Jaman, Grant J. Mathews, *Phys.Rev.D 109 (2024) 6, 063539.*

“Primordial Black Holes from Effective Field Theory of Stochastic Single Field Inflation at NNNLO”, Sayantan Choudhury, Ahaskar Karde, Pankaj Padiyar, M. Sami, *arXiv:2403.07343 [astro-ph.CO].*

“Large fluctuations in the Sky”, Sayantan Choudhury, *arXiv:2401.10925 [astro-ph.CO].*

“Realisation of the ultra-slow roll phase in Galileon inflation and PBH overproduction”, Sayantan Choudhury, Ahaskar Karde, Sudhakar Panda, M. Sami, *arXiv:2403.07343 [astro-ph.CO].*

“Generic Predictions for Primordial Perturbations and their implications”, Mohit K. Sharma, M. Sami, David F. Mota, *arXiv:2401.11142 [astro-ph.CO].*

“Big Bang Nucleosynthesis constraints on the Energy-Momentum Squared Gravity: The T^2 model”, Dukjae Jang, Mayukh R. Gangopadhyay, Myung-Ki Cheoun, Toshitaka Kajino, M. Sami, *arXiv:2402.01210 [astro-ph.CO].*

2023:

“Quantum loop effects on the power spectrum and constraints on primordial black holes”, Sayantan Choudhury, Sudhakar Panda, M. Sami, *JCAP 11 (2023) 066.*

“PBH formation in EFT of single field inflation with sharp transition”, Sayantan Choudhury, Sudhakar Panda, M. Sami, *Phys.Lett.B 845 (2023) 138123.*

“Galileon inflation evades the no-go for PBH formation in the single-field framework”, Sayantan Choudhury, Sudhakar Panda, M. Sami, *JCAP 08 (2023) 078.*

“Untangling PBH overproduction in w-SIGWs generated by Pulsar Timing Arrays for MST- EFT of single field inflation”, Sayantan Choudhury, Kritartha Dey, Ahaskar Karde, *arXiv:2311.15065 [astro-ph.CO].*

“Primordial non-Gaussianity as a saviour for PBH overproduction in SIGWs generated by Pulsar Timing Arrays for Galileon inflation”, Sayantan Choudhury, Kritartha Dey, Ahaskar Karde, Sudhakar Panda, M. Sami, *arXiv:2310.11034 [astro-ph.CO].*

“Evading no-go for PBH formation and production of SIGWs using Multiple Sharp Transitions in EFT of single field inflation”, G. Bhattacharya, S. Choudhury, K. Dey, S. Ghosh, A. Karde and N. S. Mishra, *arXiv:2309.00973 [astro-ph.CO].*

“**Scalar induced gravity waves from ultra slow-roll Galileon inflation**”, Sayantan Choudhury, Ahaskar Karde, Sudhakar Panda, M. Sami, [arXiv:2308.09273 \[astro-ph.CO\]](#).

“**Viability of Boosted Light Dark Matter in a Two-Component Scenario**”, A. Basu, A. Chakraborty, N. Kumar and S. Sadhukhan, [arXiv:2310.09349 \[hep-ph\]](#).

“**Is NanoGRAV signals pointing towards resonant particle creation during inflation?**”, M. R. Gangopadhyay, V. V. Godithi, K. Ichiki, R. Inui, T. Kajino, A. Manusankar, G. J. Mathews and Yogesh, [arXiv:2309.03101 \[astro-ph.CO\]](#).

“**Gravitational wave background from quintessential inflation and NANOGrav data**”, Barnali Das, Nur Jaman, M. Sami, [Phys.Rev.D 108 \(2023\) 10, 103510](#).

“**PBHs and GWs from T^2 -inflation and NANOGrav 15-year data**”, Seyed Ali Hosseini Mansoori, Fereshteh Felegray, Alireza Talebian, M. Sami, [JCAP 08 \(2023\) 067](#).

“ **T^2 -inflation: Sourced by energy-momentum squared gravity**”, Seyed Ali Hosseini Mansoori, Fereshteh Felegray, Alireza Talebian, M. Sami, [arXiv: 2306.09181 \[gr-qc\]](#).

“**Towards a Muon Collider**”, Contributory paper of Nilanjana Kumar as a part of the Report FERMILAB-PUB-23-123-AD-PPD-T, [Eur.Phys.J.C 83 \(2023\) 9, 864](#).

“**Veltman Criteria in Beyond Standard Model Effective Field Theory of Complex Scalar Triplet**”, Jaydeb Das, Nilanjana Kumar, [Physical Review D 108, 035048 \(2023\)](#).

“**Multi-wavelength study of TeV blazar 1ES 1218+304 using gamma-ray, X-ray and optical observations**”, Rishank Diwan, Raj Prince, Aditi Agarwal, Debanjan Bose, Pratik Majumdar, Aykut Özdönmez, Sunil Chandra, Rukaiya Khatoun, Ergün Ege, **Accepted for publication in MNRAS**, [arXiv:2301.00991 \[astro-ph.HE\]](#).

“**Krylov Complexity in Quantum Field Theory**”, Kiran Adhikari, Sayantan Choudhury, Abhishek Roy, [Nuclear Physics B 993 \(2023\) 116263](#).

“**Circuit Complexity in an interacting quenched Quantum Field Theory**”, Sayantan Choudhury, Rakshit Mandish Gharat, Saptarshi Mandal, Nilesh Pandey, Published in Symmetry in a special issue section: Physics and Symmetry/Asymmetry, Special issue: "Symmetry and Asymmetry in Quantum Mechanics", [Symmetry 2023, 15\(3\), 655](#).

“**Primordial Gravitation Wave Circuit Complexity**”, Kiran Adhikari, Sayantan Choudhury, Hardey N. Pandya, Rohan Srivastava, Published in Symmetry in a special issue section: Physics and Symmetry/Asymmetry, Special issue: "Role of Black Holes in Testing Modified Theories of Gravity", [Symmetry 2023, 15\(3\), 664](#).

“**Causality Constraint on Circuit Complexity from COSMOEFT**”, Sayantan Choudhury, Arghya Mukherjee, Nilesh Pandey, Abhishek Roy, [Fortschritte der Physik - Progress of Physics, 71 \(2023\) 4-5, 2200199](#).

“**Circuit Complexity in Z_2 EFT**”, Kiran Adhikari, Sayantan Choudhury, Sourabh Kumar, Saptarshi Mandal, Nilesh Pandey, Abhishek Roy, Soumya Sarkar, Partha Sarker, Saadat Salman Shariff, [Symmetry 15 \(2023\) 31](#).

“**Generic modification of gravity, late time acceleration and Hubble tension**”, Mayukh R. Gangopadhyay, Shibesh K. Jas Pacif, M. Sami, and Mohit K. Sharma, [Universe 9 \(2023\) 2, 83](#).

“**Phantom dark energy as a natural selection of evolutionary processes a la genetic algorithm and cosmological tensions**”, Mayukh R. Gangopadhyay, M. Sami, Mohit K. Sharma, [Phys.Rev.D 108 \(2023\) 10, 103526](#).

“No-go for the formation of heavy mass Primordial Black Holes in Single Field Inflation”, Sayantan Choudhury, Mayukh R. Gangopadhyay, M. Sami, [arXiv:2301.10000 \[astro-ph.CO\]](https://arxiv.org/abs/2301.10000).

“ α -attractor inflation: Models and Predictions”, Sukannya Bhattacharya, Koushik Dutta, Mayukh R. Gangopadhyay, Anshuman Maharana, [Phys.Rev.D 107 \(2023\) 10, 103530](https://doi.org/10.103530).

“The Oscillatory Universe, phantom crossing and the Hubble tension”, Mohit K. Sharma, Shibeh Kumar Jas Pacif, Gulmira Yergaliyeva, Kuralay Yesmakhanova, [Annals Phys. 454 \(2023\) 169345](https://doi.org/10.1051/annphys/2023454169345).

“A Case Study of Small Field Inflationary Dynamics in the Einstein-Gauss Bonnet Framework in the Light of GW170817”, Mayukh. R. Gangopadhyay, Hussain Ahmed Khan and Yogesh, [Phys.Dark Univ. 40 \(2023\) 101177](https://doi.org/10.101177).

“Cosmological implications of an interacting model of dark matter & dark energy,” K. R. Mishra, S. K. J. Pacif, R. Kumar and K. Bamba, [Phys. Dark Univ. 40 \(2023\), 101211](https://doi.org/10.101211).

“Astrophysical implications of an eternal homogeneous gravitational collapse model with a parametrization of expansion scalar,” A. Jaiswal, R. Kumar, S. K. Srivastava and S. K. J. Pacif, [Eur. Phys. J. C 83 \(2023\) no.6, 490](https://doi.org/10.1016/j.epj.2023.06.049).

“Cosmo-dynamics of dark energy models resulting from a parametrization of H in f(Q,T) gravity,” V. Kalsariya and S. K. J. Pacif, [Eur. Phys. J. Plus 138 \(2023\) no.6, 567](https://doi.org/10.1016/j.epj.2023.06.057).

“Eternal homogeneous gravitational collapse: A comprehensive analysis from Θ parametrization,” A. Jaiswal, R. Kumar, S. K. Srivastava and S. K. J. Pacif, [arXiv:2303.06343 \[gr-qc\]](https://arxiv.org/abs/2303.06343).

“A New Parametrization of Hubble Parameter in f(Q)Gravity”, M. Koussour, Shibesh Kumar Jas Pacif, M. Bennai, P.K. Sahoo, [Fortsch.Phys. 71 \(2023\) 4-5, 2200172](https://doi.org/10.1016/j.fortschphys.2023.04.005).

2021-22:

“A Brief Review on Jet Substructure in Connection with Collider Phenomenology”, Nilanjana Kumar, [arXiv:2211.10651 \[hep-ph\]](https://arxiv.org/abs/2211.10651).

“Schwinger-Keldysh path integral formalism for a Quenched Quantum Inverted Oscillator”, Sayantan Choudhury, Suman Dey, Rakshit Mandish Gharat, Saptarshi Mandal, Nilesh Pandey, [arXiv: 2210.01134 \[hep-th\]](https://arxiv.org/abs/2210.01134).

“Late-time acceleration in f(Q) gravity: Analysis and constraints in an anisotropic background”, M. Koussour, K. El Bourakadi, S. H. Shekh, Shibesh Kumar Jas Pacif, M. Bennai, [Annals Phys. 445 \(2022\), 169092](https://doi.org/10.1051/annphys/2022445169092).

“Primordial Black-Hole Dark Matter via Warm Natural Inflation”, Miguel Correa, Mayukh. R. Gangopadhyay, Nur Jaman, Grant J. Mathews, [Phys. Lett. B 835 \(2022\) 137510](https://doi.org/10.1016/j.physletb.2022.137510).

“Composite pseudo Nambu Goldstone Quintessence”, Mayukh. R. Gangopadhyay, Nilanjana Kumar, Mohit K. Sharma, [arXiv: 2205.15249 \[astro-ph.CO\]](https://arxiv.org/abs/2205.15249).

“Four-mode squeezed states in de Sitter space: A study with two field interacting quantum system,” by Sayantan Choudhury, S. Panda, N. Pandey and A. Roy, [Fortschritte der Physik - Progress of Physics, 70 \(2022\) 12, 2200124](https://doi.org/10.1016/j.fortschphys.2022.12.2200124).

“Cosmological Krylov Complexity” by Sayantan Choudhury and Kiram Adhikari, *Fortschritte der Physik - Progress of Physics*, 70 (2022) 12, 2200126.

“Cosmological Geometric Phase from Pure Quantum States: A study without/with having Bell's inequality violation”, Sayantan Choudhury, *Fortschritte der Physik - Progress of Physics*, 70 (2022) 9-10, 2100144.

“Reconstructing cosmic evolution with a density parametrization”, Ritika Nagpal, Shibesh Kumar Jas Pacif, Abishek Parida, *Mod. Phys. Lett. A* 37 (18), 2250112.

“The physics case of a 3 TeV muon collider stage: Report to Snowmass 2021”, Muon Collider Collaboration, J.D. Blass et al. Contributory paper of Nilanjana Kumar as a part of Snowmass collaboration, *arXiv:2203.07261 [hep-ph]*.

“The International Linear Collider: Report to Snowmass 2021”, I. Adachi et al., Contributory paper of Nilanjana Kumar as a part of Snowmass collaboration. *arXiv: 2203.07622 [physics, acc-ph]*.

“A note on shock wave in the dark matter medium”, Mofazzal Azam, M. Sami, Farook Rahman, *arXiv: 2202.02229 [gr-qc]*.

“Cosmological relevance of scaling solutions: A recipe for quintessential inflation” by M.Sami and R Myrzakulov, *Gen.Rel.Grav.* 54 (2022) 8, 86.

“What Is Needed of a Scalar Field If It Is to Unify Inflation and Late Time Acceleration?”, Nur Jaman and M. Sami., *Galaxies* 10, 51 2022.

“Alternative signatures of the quintuplet fermions at the LHC and future linear colliders”, Nilanjana Kumar, Vandana Sahdev, *Phys.Rev.D* 105 (2022) 11, 115016.

“The paradigm of warm quintessential inflation and spontaneous baryogenesis”, Soumen Basak, Sukannya Bhattacharya, Mayukh R. Gangopadhyay, Nur Jaman, Raghavan Rangarajan, M. Sami, *JCAP.* 03, 063, 2022.

“Production of Primordial Black Holes via Single Field Inflation and Observational Constraints”, Mayukh R. Gangopadhyay, J. C. Jain, D. Sharma, and Yogesh, *Eur.Phys.J.C* 82 (2022) 9, 849.

“Observational constraints on the massive neutrinos induced late-time cosmic acceleration”, Mohit K. Sharma, Shibesh Kumar Jas Pacif, Shynaray Myrzakul, Zamzagul Shanina, *Phys. Scr.* 97 085010, 2022.

“Cosmological aspects of $f(R, T)$ gravity in a simple model with a parametrization of q ”, Ritika Nagpal and Shibesh Kumar Jas Pacif, *Eur. Phys. J. Plus* 136(8), 875 2021.

“Late time acceleration due to generic modification of gravity and Hubble tension”, Shahnawaz A. Adil, Mayukh R. Gangopadhyay, M. Sami, Mohit K. Sharma, *Phys. Rev. D* 104(10), 103534, 2021.

“Spontaneous symmetry breaking in the late Universe and glimpses of early Universe phase transitions a la baryogenesis”, M. Sami, Radouane Gannouji, *Int. J. Mod. Phys. D* 30(3), 213005, 2021.

“Bulk viscous matter and the cosmic acceleration of the universe in $f(Q, T)$ gravity”, Simran Arora, Shibesh Kumar Jas Pacif, Abhishek Parida, P. K. Sahoo, *J. High Energy Astrophys.* 33, 1 2022.