

BIO DATA

1. Name and full correspondence address:

(Dr.) Tanmoy Paul

Assistant Professor,

Department of Physics, Visva-Bharati University, Santiniketan, Pin – 731235, West Bengal, India.

2. Email(s) and Contact number:

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Mob. +91-8617706457

3. Institution: Visva-Bharati University, Department of Physics (Institute of Science).

4. Date of Birth: 25/03/1990

5. Gender: Male

6. Category: OBC

7. Whether differently abled – No

8. Academic Qualification (Undergraduate Onwards)

| Degree | Year | Subject | University / Institution | % of marks |
|----------------------------|---|--|--|-------------------|
| Bachelor of Science (B.Sc) | 2008 - 2011 | Physics (Hons.), Mathematics, Chemistry | Jadavpur University | 79.33 % |
| Master of Science (M.Sc) | 2011 - 2013 | Physics | Jadavpur University | 74.65 % |
| PhD | August 2013 – July 2019 (PhD degree obtained: 31/07/2019) . | Theoretical Physics (Supervisor – Prof. Soumitra SenGupta) | Indian Association for the Cultivation of Science | NA |
| Postdoc | May 2021 – May 2022 | Cosmology and Astrophysics (Host – Prof. Sergei Odintsov) | International Laboratory for Theoretical Cosmology, TUSUR, Russia. | NA |
| | September 2019 – October 2019 | Cosmology and Astrophysics (Host – Prof. Sergei Odintsov) | Institute of Space Sciences (ICE-CSIC), Spain | NA |

9. About PhD:

- Ph.D thesis title: Aspects of higher curvature gravity and extra dimensional model
- Guide's Name: Prof. Soumitra SenGupta
- Institute/Organization/University: Indian Association for the Cultivation of Science (IACS), India (Degree awarded from Calcutta University).
- Year of Award: 2019

10. Work experience (in chronological order):

| S.No. | Position held | Name of the Institute | From | To | Pay Scale |
|-------|--------------------------|---|------------|--------------------------------|--|
| 1. | PhD Student | Indian Association for the Cultivation of Science (IACS), India | 01.08.2013 | 31.07.2019 (Degree Awarded) | Fellowship (during the period from 01.08.2023 to 15.08.2016; after which, I got the offer of Assistant Professor (permanent) from Chandannagar Govt. College, India). |
| 2. | Visiting Research Fellow | Institute of Space Sciences (ICE-CSIC), Barcelona, Spain | 18.09.2018 | 18.10.2018 | Fellowship |
| 3. | Visiting Research Fellow | Institute of Space Sciences (ICE-CSIC), Barcelona, Spain | 01.10.2019 | 25.10.2019 | Fellowship |
| 4. | Assistant Professor | Department of Physics, Chandannagar Govt. College (WBES), India | 16.08.2016 | 25.05.2021 | Academic Level 10 in West Bengal Education Service with Pay Band Rs. 15600 – 39100/- with A.G.P. of Rs. 6000/- plus usual allowances |
| 5. | Post-Doctoral Fellow | Labaratory for Theoretical Cosmology, International Centre of Gravity and Cosmos, TUSUR, 634050 Tomsk, Russia | 26.05.2021 | 25.05.2022 | Fellowship |
| 6. | Assistant Professor | Department of Physics, Chandannagar Govt. College (WBES), India | 26.05.2022 | 17.01.2023 | Academic Level 10 in West Bengal Education Service with Basic Pay Rs. 75200/- |
| 7. | Assistant Professor | Department of Physics, National Institute of Technology (NIT) – Jamshedpur, India | 19.01.2023 | 20.09.2023 | Academic Level 11 with entry pay Rs. 73,100/- as per 7 th CPC |
| 8. | Assistant Professor | Department of Physics, Visva-Bharati University, India. | 25.09.2023 | Present | Academic Level 10 with entry pay Rs. 57,700/- as per 7 th CPC pay matrix |

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant

| S. No. | Name of Award | Awarding Agency | Year |
|--------|---|---|-------------------------|
| 1. | Honorarium External Researcher | Labaratory for Theoretical Cosmology, International Centre of Gravity and Cosmos, TUSUR, 634050 Tomsk, Russia | May 2023 – May 2024 |
| 2. | Honorarium External Researcher | Labaratory for Theoretical Cosmology, International Centre of Gravity and Cosmos, TUSUR, 634050 Tomsk, Russia | June 2024 – June 2025 |
| 3. | Young Investigator Award | Symmetry (MDPI) | 2021 |
| 4. | Juan de la Cierva (JDC) Fellow | Spain Ministry of Science, Innovations and Universities (MICINN), at ICE-CSIC Spain | 2022 |
| 5. | Postdoctoral Researcher Fellowship | Labaratory for Theoretical Cosmology, International Centre of Gravity and Cosmos, TUSUR, 634050 Tomsk, Russia | 2021 |
| 6. | International Program Exchange Fellow (IPEF) | Institute of Astrophysics (IoA) Central China Normal University (CCNU) | 2020 |
| 7. | "CSIR" Fellow | Council of Scientific and Industrial Research (CSIR) - UGC India. (All India Rank = 30) | 2013 |
| 8. | Institute JRF Fellowship from Indian Association for the Cultivation of Science India | Indian Association for the Cultivation of Science (IACS), India | 2013 |
| 9. | INSPIRE Fellowship | SERB, India | 2008-2011 (during B.Sc) |
| 10. | INSPIRE Fellowship | SERB, India | 2011-2013 (during M.Sc) |

- Qualifying “Joint Entrance screening Test (JEST)” with “**All India Rank = 07**”, in the year 2013.
- Qualifying “Graduate Aptitude Test in Engineering (GATE)” with “**All India rank = 06**”, in th year 2013.
- Qualifying “Joint Admission Test for Masters (JAM)” with “**All India rank = 10**”, in th year 2011.

12. Publications (List of papers published in SCI Journals, in year wise descending order):

(an * with the corresponding author, and the authors in the papers are according to the alphabetical order of their surname) :

| S.No | Authors | Title | Name of Journal | Volume | Page | Year |
|------|--|--|--|--------|--------|------|
| 1. | T Paul^(*) | Origin of bulk viscosity in cosmology and its thermodynamic implications | Physical Review D (PRD) REF: Phys.Rev.D 111 (2025) 8, 083540 | 111 | 083540 | 2025 |
| 2. | SD Odintsov, T Paul^(*) , S SenGupta | Natural validation of the second law of thermodynamics in cosmology | Physical review D (PRD) REF: Phys.Rev.D 111 (2025) 4, 043544 | 111 | 043544 | 2025 |
| 3. | SD Odintsov, SD Onofrio, T Paul^(*) | Generalized entropic dark energy with spatial curvature | Physics of the Dark Universe. REF: Phys.Dark Univ. 48 (2025) 101920 | 48 | 101920 | 2025 |
| 4. | SD Odintsov, SD Onofrio, T Paul^(*) | Primordial gravitational waves in horizon cosmology and constraints on entropic parameters | Physical Review D (PRD) REF: Phys.Rev.D 110 (2024) 4, 043539 | 110 | 043539 | 2024 |
| 5. | SD Odintsov, T Paul^(*) , S SenGupta | Second law of horizon thermodynamics during cosmic evolution | Physical Review D (PRD) REF: Phys.Rev.D 109 (2024) 10, 103515 | 109 | 103515 | 2024 |
| 6. | H Kumar, T Paul^(*) , S SenGupta | f(R) gravity with spacetime torsion (Selected for EPN Issue) | Europhysics Letters (EPL). REF: EPL 147 (2024) 2, 29001 | 147 | 29001 | 2024 |
| 7. | S. Kibaroglu ^(*) , SD Odintsov, T Paul | Cosmology of unimoduludr Born-Infeld-F(R) gravity | Physics of the Dark Universe. REF: Phys.Dark Univ. 44 (2024) 101445 | 44 | 101445 | 2024 |
| 8. | S Nojiri, SD Odintsov, T Paul^(*) | Horizon entropy consistent with the FLRW equations for general modified theories of gravity and for all equations of state of the matter field | Physical Review D (PRD) REF: Phys.Rev.D 109 (2024) 4, 043532 | 109 | 043532 | 2024 |
| 9. | S Nojiri, SD Odintsov, T Paul^(*) | Different aspects of entropic cosmology | Universe (Feature paper-2024 “Cosmology”). | 10 | 352 | 2024 |
| 10. | S Nojiri, SD Odintsov, T Paul^(*) | Microscopic Interpretation of generalized entropy | Physics Letters B (PLB) REF: Phys.Lett.B 847 (2023) 138321 | 847 | 138321 | 2023 |

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|-----|---|--|--|-----|--------|------|
| 11. | SD Odintsov, S Onofrio, T Paul^(*) | Holographic realization from inflation to reheating in generalized entropic cosmology | Physics of the Dark Universe. REF: Phys.Dark Univ. 42 (2023) 101277 | 42 | 101277 | 2023 |
| 12. | SD Odintsov , T Paul^(*) | From inflation to reheating and their dynamical stability analysis in Gauss-Bonnet gravity | Physics of the Dark Universe. REF: Phys.Dark Univ. 42, (2023) 101263 | 42 | 101263 | 2023 |
| 13. | T Paul^(*) , S SenGupta | Ekyrotic bounce driven by Kalb-Ramond field | Physics of the Dark Universe. REF: Phys.Dark Univ. 41, (2023) 101236. | 41 | 101236 | 2023 |
| 14. | S Nojiri, SD Odintsov, T Paul^(*) | Holographic realization of constant roll inflation and dark energy: An unified scenario | Physics Letters B. REF: Phys.Lett.B 841 (2023) 137926 | 841 | 137926 | 2023 |
| 15. | SD Odintsov, T Paul^(*) | A non-singular generalized entropy and its implications on bounce cosmology | Physics of the Dark Universe. REF: Phys.Dark Univ. 39 (2023) 101159 | 39 | 101159 | 2023 |
| 16. | S Nojiri, SD Odintsov, T Paul^(*) | Modified Cosmology from the thermodynamics of apparent horizon | Physics Letters B REF: Phys.Lett.B 835 (2022) 137553 | 835 | 137553 | 2022 |
| 17. | S Nojiri, SD Odintsov, T Paul^(*) | Early and late universe holographic cosmology from a new generalized entropy | Physics Letters B REF: Phys.Lett.B 831 (2022) 137189 | 831 | 137189 | 2022 |
| 18. | I Banerjee, T Paul , S SenGupta ^(*) (review article) | Aspects of non-singular bounce in modified gravity theories | General Relativity and Gravitation REF: Gen.Rel.Grav. 54 (2022) 10, 119 | 54 | 119 | 2022 |
| 19. | S Nojiri, SD Odintsov, T Paul^(*) | Towards a smooth unification from an ekpyrotic bounce to the dark energy era | Physics of the Dark Universe. REF: Phys.Dark Univ. 35 (2022) 100984 | 35 | 100984 | 2022 |
| 20. | S Nojiri, SD Odintsov, T Paul^(*) | Barrow entropic dark energy: A member of generalized holographic dark energy family | Physics Letters B. REF: Phys.Lett.B 825 (2022) 136844 | 825 | 136844 | 2022 |
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|-----|---|---|--|------|--------|------|
| 21. | K Bamba, SD Odintsov, T Paul ^(*) , D Maity | Helical magnetogenesis with reheating phase from higher curvature coupling and baryogenesis | Physics of the Dark Universe REF: Phys.Dark Univ. 36 (2022) 101025 | 36 | 101025 | 2022 |
| 22. | I Banerjee, SD Odintsov, T Paul ^(*) , S SenGupta | Unifying an asymmetric bounce to the dark energy in Chern–Simons F(R) gravity | Physics of the Dark Universe. REF: Phys.Dark Univ. 33 (2021) 100864. | 33 | 100864 | 2021 |
| 23. | R Haque ^(*) , D Maity, T Paul , L Sriramkumar | Decoding the phases of early and late time reheating through imprints on primordial gravitational waves | Physical Review D. REF: Phys.Rev.D 104 (2021) 6, 063513 | 104 | 063513 | 2021 |
| 24. | I Banerjee, T Paul ^(*) , S SenGupta | Critical analysis of modulus stabilization in a higher dimensional F(R) gravity | Physical Review D. REF: Phys.Rev.D 104 (2021) 10, 104018 | 104 | 104018 | 2021 |
| 25. | S Nojiri, SD Odintsov, T Paul ^(*) | Different Faces of Generalized Holographic Dark Energy | Symmetry (Editorial choice). REF: Symmetry 13 (2021) 6, 928 | 13 | 928 | 2021 |
| 26. | D Maity, S Pal, T Paul ^(*) | Effective theory of inflationary magnetogenesis and constraints on reheating | Journal of Cosmology and Astroparticle Physics. REF: JCAP 05 (2021) 045 | 2021 | 045 | 2021 |
| 27. | K Bamba, E Elizalde, SD Odintsov, T Paul ^(*) | Inflationary magnetogenesis with reheating phase from higher curvature coupling. | Journal of Cosmology and Astroparticle Physics. REF: JCAP 04 (2021) 009 | 2021 | 009 | 2021 |
| 28. | I Banerjee, T Paul ^(*) , S SenGupta | Bouncing Cosmology in a curved braneworld. | Journal of Cosmology and Astroparticle Physics. REF: JCAP 02 (2021) 041 | 2021 | 041 | 2021 |
| 29. | SD Odintsov, V Oikonomou, T Paul ^(*) | From a bounce to the dark energy era with F(R) gravity. | Classical and Quantum Gravity. REF: Class.Quant.Grav. 37 (2020) 23, 235005 | 37 | 235005 | 2020 |
| 30. | T Paul ^(*) , S SenGupta | Scalaron tunneling and the fate of antisymmetric tensor fields in F(R) gravity. | Classical and Quantum Gravity. REF: Class.Quant.Grav. 37 (2020) 22, 225012 | 37 | 225012 | 2020 |
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| 31. | SD Odintsov, V Oikonomou, T Paul^(*) | Bottom-up reconstruction of non-singular bounce in $F(R)$ gravity from observational indices | Nuclear Physics B. REF: Nuclear Physics B 959 (2020) 115159 | 959 | 115159 | 2020 |
| 32. | S Nojiri, SD Odintsov, V Oikonomou, T Paul^(*) | Unifying Holographic Inflation with Holographic Dark Energy: a Covariant Approach | Physical Review D. REF: Phys.Rev.D 102 (2020) 2, 023540 | 102 | 023540 | 2020 |
| 33. | N Banerjee, T Paul^(*) | Cosmological quantum entanglement: A possible testbed for the existence of Kalb-Ramond field. | Classical and Quantum Gravity. REF: Class.Quant.Grav 37 (2020) 13, 135013 | 37 | 135013 | 2020 |
| 34. | E Elizalde, SD Odintsov, V Oikonomou ^(*) , T Paul | Extended matter bounce scenario in ghost free $f(R, G)$ gravity compatible with GW170817 | Nuclear Physics B. REF: Nuclear Physics B 954(2020) 114984 | 954 | 114984 | 2020 |
| 35. | E Elizalde, SD Odintsov, T Paul^(*) | Viable non-singular cosmic bounce in holonomy improved $F(R)$ gravity endowed with a Lagrange multiplier | The European Physical Journal C. REF: Eur.Phys.J.C 80 (2020) 1, 10 | 80 | 10 | 2020 |
| 36. | S Nojiri, SD Odintsov, T Paul^(*) | Non-singular Bounce Cosmology from Lagrange Multiplier $F(R)$ Gravity | Physical Review D. REF: Phys.Rev.D 100 (2019) 8, 084056 | 100 | 084056 | 2019 |
| 37. | T Paul^(*) | Holographic correspondence of $F(R)$ gravity with/without matter fields | EPL (Europhysics Letters). EPL 127 (2019) 2, 20004 | 127 | 20004 | 2019 |
| 38. | N Banerjee, T Paul^(*) | Electromagnetic effect on anisotropic scalar field collapse in higher curvature gravity | General Relativity and Gravitation. REF: Gen.Rel.Grav. 51 (2019) 7, 91 | 51 | 1-15 | 2019 |
| 39. | T Paul^(*) , S SenGupta | Dynamical suppression of spacetime torsion | The European Physical Journal C. REF: Eur.Phys.J.C 79 (2019) 7, 591 | 79 | 1-14 | 2019 |
| 40. | S Nojiri, SD Odintsov, V Oikonomou ^(*) , T Paul | Viable inflationary models in a ghost-free Gauss–Bonnet theory of gravity | The European Physical Journal C. REF: Eur.Phys.J.C 79 (2019) 7, 565 | 79 | 1-24 | 2019 |

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| 41. | E Elizalde, SD Odintsov, T Paul , Diego Saez ^(*) | Inflationary universe in F(R) gravity with antisymmetric tensor fields and their suppression during its evolution | Physical Review D. REF: Phys.Rev.D 99 (2019) 6, 063506 | 99 | 063506 | 2019 |
| 42. | E Elizalde, SD Odintsov, V Oikonomou ^(*) , T Paul | Logarithmic-corrected R2 gravity inflation in the presence of Kalb-Ramond fields | Journal of Cosmology and Astroparticle Physics. REF: JCAP 02 (2019) 017 | 2019 | 017 | 2019 |
| 43. | A Das, T Paul ^(*) , S SenGupta | Invisibility of antisymmetric tensor fields in the light of F(R) gravity | Physical Review D. REF: Phys.Rev.D 98 (2018) 10, 104002 | 98 | 104002 | 2018 |
| 44. | S Chakraborty, T Paul ^(*) , S SenGupta | Inflation driven by Einstein-Gauss-Bonnet gravity | Physical Review D. REF: Phys.Rev.D 98 (2018) 8, 083539 | 98 | 083539 | 2018 |
| 45. | T Paul ^(*) | A possible testbed for warped extra dimension from the angle of Buchdahl's limit | The European Physical Journal C. REF: Eur.Phys.J.C 78 (2018) 6, 508 | 78 | 1-9 | 2018 |
| 46. | T Paul ^(*) , S SenGupta | Radion tunneling in modified theories of gravity | The European Physical Journal C. REF: Eur.Phys.J.C 78 (2018) 4, 338 | 78 | 1-9 | 2018 |
| 47. | N Banerjee, T Paul ^(*) | Scalar field collapse in Gauss-Bonnet gravity | The European Physical Journal C. REF: Eur.Phys.J.C 78 (2018) 2, 130 | 78 | 1-6 | 2018 |
| 48. | A Das, H Mukherjee, T Paul ^(*) , S SenGupta | Radion stabilization in higher curvature warped spacetime | The European Physical Journal C. REF: Eur.Phys.J.C 78 (2018) 2, 108 | 78 | 1-11 | 2018 |
| 49. | J Mitra, T Paul ^(*) , S SenGupta | Fermion localization in higher curvature and scalar-tensor theories of gravity | The European Physical Journal C. REF: Eur.Phys.J.C 77 (2017) 12, 833 | 77 | 1-13 | 2017 |
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| 50. | A Das, D Maity, T Paul^(*) , S SenGupta | Bouncing cosmology from warped extra dimensional scenario | The European Physical Journal C. REF: Eur.Phys.J.C 77 (2017) 12, 813 | 77 | 1-9 | 2017 |
| 51. | N Banerjee, T Paul^(*) | Inflationary scenario from higher curvature warped spacetime | The European Physical Journal C. REF: Eur.Phys.J.C 77 (2017) 10, 672 | 77 | 1-11 | 2017 |
| 52. | T Paul^(*) , S SenGupta | Fermion localization in a backreacted warped spacetime | Physical Review D. REF: Phys.Rev.D 95 (2017) 11, 115011 | 95 | 115011 | 2017 |
| 53. | T Paul^(*) , S SenGupta | Graviton Kaluza-Klein modes in nonflat branes with stabilized modulus | Physical Review D. REF: Phys.Rev.D 93 (2016) 8, 085035 | 93 | 085035 | 2016 |

13. Detail of Patents : NA (My research works are highly theoretical, so there is no opportunity to apply for Patents)

14. Books/Reports/Chapters/General articles etc.

| S.No | Title of Book | Title of Chapter | Author(s) | Publisher | Year of publication |
|------|--|--|-------------------------------|--------------------------------------|---------------------|
| 1. | International Conference on Frontiers of Fundamental Physics | Generalized (Non-singular) entropy function and its applications to cosmology and black holes (Pages: 165-192) | SD Odintsov, T Paul | Springer International Publishing | 2022 |

15. Any other Information (maximum 500 words)

• **Invited Speaker in the Conferences :**

I. “SCGSC 2018” at Universite Libre de Brussels, Belgium (in 2018);

II. “Recent Trends on Relativity and Cosmology” at Jadavpur University, India (in 2019);

III. “Gravity, Cosmology & Astrophysics:Recent Trends In Research” at Jadavpur University, India (in 2020);

IV. “Recent Developments in Modified Gravity and Cosmology” at BITS Pilani, Hyderabad, India (in 2021);

V. “27th International Conference of International Academy of Physical Sciences on Advances in Relativity and Cosmology” at BITS Pilani, Hyderabad (in 2021);

VI. “Recent Advances on Theoretical Cosmology and Astrophysics” at Aristotle University of Thessaloniki, Greece (in 2021, online mode);

VII. “Testing Aspects of General Relativity” at IIT Gandhinagar, India (in 2022);

VIII. “Asia-Pacific School and Workshop on Gravitation and Cosmology 2022” at Department of physics, Soochow University, Taiwan (in 2022, online mode);

IX. “Gravity, Cosmology and the Raychaudhuri Equation” at Jadavpur University, India (in 2024, in the memory of Amal Kumar Raychaudhuri);

X. “International Conference on Gravitation, Astrophysics and Cosmology (ICGAC) 2024” at GLA University, India (in 2024);

XI. “Computer Science and Gravitation-2024” at Khazar University, Baku (in 2024).

XII. “International Meeting on Relativistic Astrophysics and Cosmology” at North Bengal University (ICARD), India (in 2025).

XIII. Invited Webinar Speaker at various International and National institutes: University of New Brunswick, Canada (in 2021 and 2022); University of Lethbridge, Canada (in 2021); Nagoya University, Japan (in 2021 and 2022); Institut de Ciencies de l’Espai (ICE-CSIC), Spain (in 2020 and 2021); Indian Association for the Cultivation of Science, India (in 2020); Saha Institute of Nuclear Physics, India (in 2020).

- **Invited Lecturer at “Mini School on Gravitation and Cosmology” (Convener: Prof. Lakshmanan Sriramkumar) at IIT Madras, India.**
- **As reviewer :** In the Journal : Classical and Quantum Gravity (CQG), Nuclear Physics B (NPB), European Physical Journal A (EPJA), European Physical Journal C (EPJC), (5) General Relativity and Gravitation (GERG), Physics of the Dark Universe (PDU), Annalen der Physik (AdP).
- **Supervised 8 M.Sc students (from Visva-Bharati U. , Jadavpur U.) for their Master projects.**
- **Total number of citations = 2000+ . Index h = 25+, i-10 index= 40+ (Google Scholar -**

[https://scholar.google.com/citations?](https://scholar.google.com/citations?hl=en&user=r0p_YJMAAAAJ&view_op=list_works&sortby=pubdate)

[hl=en&user=r0p_YJMAAAAJ&view_op=list_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=r0p_YJMAAAAJ&view_op=list_works&sortby=pubdate)