

CURRICULUM VITAE

Dr. Sudip Mishra.

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ACADEMIC DETAILS :

- Ph.D from Department of Mathematics, Jadavpur University, Kolkata, 19th January, 2021.
Ph.D Thesis title: **Dynamics around nonhyperbolic Equilibrium and Bifurcation Analysis of various cosmological models.**
- M.Tech (Computer Science and Data Processing) from Indian Institute of Technology, Kharagpur (India).
- M.Sc. (Mathematics) from Chennai Mathematical Institute, Chennai (India).
- B.Sc. (Mathematics Hons. with Computer Sc. and Physics general papers) from Ramakrishna Mission Vidhyamandira, Belur Math (Kolkata Univ.) (India).

TEACHING EXPERIENCES:

4 years (Indian Maritime University, Kolkata; Department of Applied Mathematics at MAKAUT,WB; Adamas University)

RESEARCH INTERESTS:

Topological Dynamical system, Nonlinear Dynamics, Mathematical Physics, Mathematical Modeling.

PROJECT GUIDANCE :

M.Sc. project guidance (3 completed), B.Sc. project guidance (1 completed).

LIST OF PUBLICATIONS :

1. **S. Mishra**, S. chakraborty *et al.*, "Study of interacting dark energy models using Dynamical system analysis", *Int. J. of Geometric Methods in Modern Physics (IJGMMP)* , (online ready) 2650107 (2026).
(DOI: <https://doi.org/10.1142/S0219887826501070>). Impact factor: 2.2 (peer reviewed).
2. G. Mondal, **S. Mishra** *et al.*, "Interacting tachyon with varying mass dark matter", *Physica Scripta - IOPscience*, Volume 100, Number 8, July, 2025.
(DOI:10.1088/1402-4896/adf1c7). Impact factor: 2.6 (peer reviewed).
3. Soumya Chakraborty, **S. Mishra**, Subenoy Chakraborty, *Dynamical System analysis of Quintessence dark energy model*, *International Journal of Geometric Methods in Modern Physics*, **22**, No. 01, 2450250 (2025).
(DOI:10.1142/S0219887824502505). Impact Factor: 2.1 (peer reviewed).
4. Soumya Chakraborty, **S. Mishra**, Subenoy Chakraborty, *A dynamical system analysis of bouncing cosmology with spatial curvature*, *Gen Relativ Gravit* 56, 83 (2024).
(DOI: 10.1007/s10714-024-03265-1), Impact factor: 2.3 (peer reviewed).

5. G. Mondal, **S. Mishra** et al., "A study of interacting scalar field model from the perspective of the dynamical systems theory", *Physics of the Dark Universe* **40**, No. 101210 (2023) (DOI: <https://doi.org/10.1016/j.dark.2023.101210>), Impact factor: 5.0 (peer reviewed).
6. A Bhandari, S Mishra and S Chakraborty, *p-Adic Weaving Multiframelets. p-Adic Numbers, Ultrametric Analysis and Applications*, Vol. 15, pp. 104-112 (2023). (<https://link.springer.com/article/10.1134/S2070046623020036>).
7. Soumya Chakraborty, **S. Mishra** and Subenoy Chakraborty, "A dynamical system analysis of cosmic evolution with coupled phantom dark energy with dark matter", *International Journal of Modern Physics D* **31**, No. 01, 2150129 (2022) (DOI: <https://doi.org/10.1142/S0218271821501297>), Impact factor: 1.8 (peer reviewed).
8. Soumya Chakraborty, **S. Mishra** and Subenoy Chakraborty, "Dynamical system analysis of self-interacting three-form field cosmological model: stability and bifurcation", *Eur. Phys. J. C* **81** : 439 (2021) (DOI: 10.1140/epjc/s10052-021-09221-6), Impact factor: 4.1 (peer reviewed).
9. Soumya Chakraborty, **S. Mishra** and Subenoy Chakraborty, "Dynamical system analysis of three-form field dark energy model with baryonic matter", *Eur. Phys. J. C* **80** : 852 (2020) (DOI: 10.1140/epjc/s10052-020-8427-3), Impact factor: 4.1 (peer reviewed).
10. S. Pal, **S. Mishra** and S. Chakraborty, "Dynamical system analysis of a nonminimally coupled scalar field", *International Journal of Modern Physics D* **28**, No. 15, 1950173 (2019) (DOI: 10.1142/S0218271819501736), Impact factor: 1.8 (peer reviewed).
11. **S. Mishra** and S. Chakraborty, "A non-canonical scalar field cosmological model: Stability and Bifurcation analysis", *Mod.Phys.Lett. A* **34** , No. 32, 1950261 (2019) (DOI: 10.1142/S0217732319502614), Impact factor: 1.5 (peer reviewed).
12. **S. Mishra** and S. Chakraborty, "Stability and bifurcation analysis of interacting $f(T)$ cosmology", *The European Physical Journal C* **79** : 328 (2019) (DOI:10.1140/epjc/s10052-019-6839-8), Impact factor: 4.1 (peer reviewed).
13. **S. Mishra** and S. Chakraborty, "Dynamical system analysis of Einstein–Skyrme model in a Kantowski–Sachs space-time", *Annals Phys.* **406**, 207-219 (2019) (DOI: 10.1016/j.aop.2019.04.006), Impact factor: 3.0 (peer reviewed).
14. **S. Mishra** and S. Chakraborty, "Stability analysis of an interacting holographic dark energy model", *Mod.Phys.Lett. A* **34**, No. 19, 1950147 (2019) (DOI: 10.1142/S0217732319501475), Impact factor: 1.5 (peer reviewed).
15. **S. Mishra** and S. Chakraborty, "Dynamical system analysis of quintom dark energy model", *The European Physical Journal C* **78** : 917 (2018) (DOI: 10.1140/epjc/s10052-018-6405-9), Impact factor: 4.1 (peer reviewed).

PARTICIPATION IN CONFERENCES :

- Presented paper in the Vigyan Utsav for "Young Scientists Award" on 4th Dec, 2022 at Paschimbanga Bangla Akademy & Charukala Bhavan, Kolkata.
- Presented talk on "Application of Center manifold and Bifurcation theory in Cosmology" in the 12th Conference on Nonlinear System and Dynamics (CNSD 2019) held at Indian Institute of Technology Kanpur, in Dec, 2019.
- Poster presented in the *Indian Women & Mathematics Regional Workshop On Research And Opportunities*, in Oct, 2019.
- Presented paper titled "Dynamical System analysis of various cosmological models using Center manifold theory" in the *National Seminar on Current Trends in Mathematics and its Applications (NSCTMA- 2019)* held at Department of Mathematics, Jadavpur University, in Mar, 2019.
- Presented paper titled "Dynamical System analysis of the Einstein-Skyrme Model in a Kantowski-Sachs Space-Time" in the *International Conference on Mathematics and its Applications* held at Department of Mathematics, The University of Burdwan, in Feb, 2018.
- Presented paper titled "Noncanonical Scalar Field Cosmological model: Dynamical System Analysis from Center Manifold and Bifurcation point of view" in the *International Conference on Mathematical Analysis and Application in Modelling* held at Department of Mathematics, Jadavpur University, in Jan, 2018.

- Presented paper titled “Stability and Bifurcation analysis of Kantowski-Sachs universes sourced by a Skyrme fluid” in the *International Conference on Applied and Computational Mathematics* held at Department of Mathematics, Indian Institute of Technology Kharagpur, in Nov, 2018.
- Presented poster titled “Dynamical system analysis of Holographic Dark Energy Model in the context of Liapunov function/ Center manifold theory” in the *Conference on Nonlinear Systems and Dynamics (CNSD 2018)* held at Department of Mathematics, Jawaharlal Nehru University, New Delhi, in Oct, 2018.
- Presented paper in the *National Seminar on Nonlinear and Complex Phenomena* held at Department of Mathematics, Jadavpur University, in Aug, 2018.

TRAINING :

- *Mathematica* training program on 20-02-2023 and 21-02-2023 conducted by MAKAUT,WB.
- Completed *Machine Learning with python* project in the department of Computer Vision and Pattern Recognition Unit, Indian Statistical Institute, Kolkata from January, 2021 to July, 2021.
- Attended Online Short Term Course on Python for Machine Learning conducted by the Department of Computer Science and Engineering, National Institute Of Technology Warangal, from 02-08-2021 to 06-08-2021.
- Participated in the 5th *International Conference on Complex Dynamical Systems and Applications (CDSA 2017)* organized at the Indian Institute of Technology, Guwahati, in December, 2017.
- Participated in the *One-day training programme on MATLAB* organized by the Calcutta Mathematical Society on April 12, 2017.
- Participated in the *Winter School and Conference on Algebra and Number Theory*, (NBHM, DST & UGC-SAP (DRS-I) sponsored) organized by the Department of Mathematical Sciences, Tezpur University, during Dec 23rd to 29th, 2011.
- Participated in the *Advanced Instructional School on Lie Algebras* during 4th to 23rd, 2011 conducted at the Chennai Mathematical Institute, Chennai.

AWARDS AND FELLOWSHIPS :

- **Selected for Research Associate(2021)** in the department of Physical Science at IISER Kolkata.
- **CSIR Research Fellowship (2016)** from Council of Scientific and Industrial research New Delhi.
- **Awarded 3rd Best Paper Presentation Award** from Centre for Plasma Studies, in collaboration with Department of Mathematics, Jadavpur University & Advanced Centre for Nonlinear and Complex Phenomena(Kolkata) (August 03, 2018).
- Qualified in Graduate Aptitude Test in Mathematical Science (**GATE**) 2013, AIR 22.
- **CMI Post Graduate Fellowship (2010)** from Chennai Mathematical Institute, Chennai.

PROGRAMMING LANGUAGE SKILLS :

- **Languages:-** \LaTeX , Python, Mathematica (*Basic Knowledge*).