

# Nachiket Karve

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**Research Interests** – Nonlinear Dynamics, Chaos Theory, Statistical Mechanics

## EDUCATION

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### Boston University

PhD, Physics

2021 – Present

Advisor: [Dr David Campbell](#)

### Indian Institute of Technology, Kanpur

BS-MS Dual Degree, Physics

2016 – 2021

GPA: 9.6/10.0

Advisors: [Dr Loganayagam R](#), [Dr Nilay Kundu](#)

*Thesis: Non-Polynomial Divergences in Wightman Correlation Functions*

## PAPERS AND PUBLICATIONS

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- [1] N. Rose, [N. Karve](#), and D. K. Campbell. *Gradient of the Adiabatic Gauge Potential in Classical Systems*. 2025. arXiv: [2508.03804 \[nlin.CD\]](#). URL: <https://arxiv.org/abs/2508.03804>.
- [2] [N. Karve](#), N. Rose, and D. Campbell. *Diffusion as a Signature of Chaos*. 2025. arXiv: [2507.18617 \[nlin.CD\]](#). URL: <https://arxiv.org/abs/2507.18617>.
- [3] [N. Karve](#), N. Rose, and D. Campbell. “Adiabatic gauge potential as a tool for detecting chaos in classical systems”. In: *Phys. Rev. Res.* 7 (3 July 2025), p. 033006. DOI: [10.1103/1z5x-j644](#). URL: <https://link.aps.org/doi/10.1103/1z5x-j644>.
- [4] [N. Karve](#), N. Rose, and D. Campbell. “Periodic orbits in Fermi–Pasta–Ulam–Tsingou systems”. In: *Chaos: An Interdisciplinary Journal of Nonlinear Science* 34.9 (Sept. 2024), p. 093117. ISSN: 1054-1500. DOI: [10.1063/5.0223767](#). eprint: [https://pubs.aip.org/aip/cha/article-pdf/doi/10.1063/5.0223767/20161085/093117\\_1\\_5.0223767.pdf](https://pubs.aip.org/aip/cha/article-pdf/doi/10.1063/5.0223767/20161085/093117_1_5.0223767.pdf). URL: <https://doi.org/10.1063/5.0223767>.
- [5] [N. Karve](#) and R. Loganayagam. *Heisenberg Picture for Open Quantum Systems*. 2020. arXiv: [2011.15118 \[quant-ph\]](#). URL: <https://arxiv.org/abs/2011.15118>.

## TALKS

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Chaos in Classical Systems, *Boston University, May 2025* [[slides](#)]

Chaos in FPUT-like Systems, *March Meeting 2025, Anaheim* [[slides](#)]

The Metastable State of the FPUT Problem, *March Meeting 2024, Minneapolis* [[slides](#)]

The Metastable State of the FPUT Problem, *March Meeting 2023, Las Vegas* [[slides](#)]

## AWARDS AND HONORS

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KVPY (Kishore Vaigyanik Protsahan Yojana) Fellowship	<i>2016 – 2021</i>
Academic Excellence Award, IIT Kanpur	<i>2016, 2017, 2018, 2019</i>
Silver Medal, University Physics Competition	<i>2017</i>

## TEACHING EXPERIENCE

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<b>Boston University</b>	<i>2021 – Present</i>
Quantum Computing (PY 536), Teaching Fellow and Guest Lecturer	
General Physics I (PY 211), Grader	
General Physics II (PY 212), Teaching Fellow and Grader	
Physics I (PY 105), Teaching Fellow	
Physics II (PY 106), Teaching Fellow	

## MENTORSHIP

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**Undergraduate Students**

Emir Akdag

Jonah Gluck

Kristen Bestavros

## ACADEMIC SERVICES

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Physical Review Referee	<i>2025 – Present</i>
Head and Volunteer at <a href="#">Prayas</a> , IIT Kanpur's Community Welfare School	<i>2018 – 2021</i>
Academic Mentor, IIT Kanpur	<i>2017 – 2018</i>