N. Dileep Varikuti

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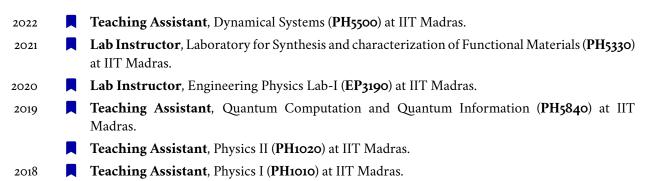
About me

Hi, I am **Naga Dileep Varikuti**. I am currently holding a research scholar position at **Indian Institute of Technology Madras, Chennai**, working under the supervision of **Prof. Vaibhav Madhok**. My research interests include quantum information theoretic aspects of quantum chaos. Currently, I am working on scrambling of quantum information in many-body systems.

Education

2018 –	Ph.D., Indian Institute of Technology Madras, Chennai in Theoretical Physics. Research area: <i>Information scrambling and chaos in many-body quantum systems.</i> Mentor: Prof. Vaibhav Madhok CGPA: 8.06
2016 – 2018	M.Sc., Visvesvaraya National Institute of Technology, Nagpur in Physics. Thesis title: The Schmidt Decomposition in Quantum Mechanics - Bipartite and Multipartite Quantum Systems. Mentor: Dr. M. S. Ram Karthik CGPA: 7.65
2013 - 2016	B.Sc., Andhra Loyola College (Autonomous), Vijayawada in Maths, Physics, Statistics. Percentage of marks obtained: 90.3
2011 – 2013	Intermediate, RamaKrishna Sahakara Junior College, Guntur in Maths, Physics, Chemistry. Percentage of marks obtained: 95.1
2010 – 2011	SSC, SVVN High School, 75-Tyallur . Percentage of marks obtained: 94.2

Academic Experience



Skills

Programming/Coding

- Python, Julia, Fortran95, C, MATLAB, Wolfram Mathematica
 - LaTex, Beamer, Markdown, MS Word.
- Languages

Typography

English, Telugu.

Research interests

Employing information theoretic methods to understand the dynamics of quantum many-body systems.

Specific interests-1: Quantum information scrambling and chaos in many-body quantum systems, quantum algorithms for quantifying scrambling, quantum state tomography, quantum sensing and metrology, Komogorov-Arnold-Mosel (KAM) stability studies of many-body quantum integrable systems.

Research Publications

Journal Articles

N. D. Varikuti, "Scrambling in a non-kam system: Coarser versus finer time scales," forthcoming, 2023.

N. D. Varikuti, A. Sahu, A. Lakshminarayan, and V. Madhok, "Probing dynamical sensitivity of a non-kam system through out-of-time-order correlators," *arXiv preprint arXiv:2306.04209*, 2023.

N. D. Varikuti, A. Sahu, V. Madhok, and A. Lakshminarayan, "Non-kam sensors for quantum metrology," *forthcoming*, 2023.

N. D. Varikuti and V. Madhok, "Out-of-time ordered correlators in kicked coupled tops and the role of conserved quantities in information scrambling," *arXiv preprint arXiv:2201.05789*, 2022.

A. Sahu, **N. D. Varikuti**, and V. Madhok, "Quantum tomography under perturbed hamiltonian evolution and scrambling of errors–a quantum signature of chaos," *arXiv preprint arXiv:2211.11221*, 2022.

6 S. Pg, **N. D. Varikuti**, and V. Madhok, "Exponential speedup in measuring out-of-time-ordered correlators and gate fidelity with a single bit of quantum information," *Physics Letters A*, vol. 397, p. 127 257, 2021.

Feb, 2023	Quantum Information Processing 2023 @ Ghent University, Belgium.
Jan, 2023	Progress in Quantum Science and Technologies @ IIT Madras, India.
Dec, 2022	Conference on Nonlinear Systems and Dynamics @ IISER Pune, India.
Oct, 2021	Probing Complex Quantum Dynamics through Out-of-time-ordered Correlators , Virtual-cum-In person hybrid workshop @ Max Planck Institute.
Dec, 2020	Quantum Foundations, Technology and Applications 2020 @ IISER Mohali, India.
Nov, 2020	Q-Turn 2020, international quantum information workshop series, Attended virtually.
June, 2020	6TH DYNAMICS DAYS CENTRAL ASIA , Online Conference @ Nur-Sultan, Kaza- khstan.
Feb, 2020	Indo-German Workshop on Quantum Science and Technologies 2020 @ IIT Madras, India.
Nov, 2019	THERMALIZATION, MANY BODY LOCALIZATION AND HYDRODYNAMICS @ ICTS-TIFR, Bangalore, India.
June, 2019	BANGALORE SCHOOL ON STATISTICAL PHYSICS – X @ ICTS-TIFR, Bangalore, India.

Conferences attended

References

Available on Request