Dileep V.N.

PhD student at IIT Madras, Chennai

HSB-234, Dept of Physics
IIT Madras, Chennai, India
+919642576218
+918919331176
vndileep@physics.iitm.ac.in
ORCID identifier: 0000-0001-8487-9507

I am currently a research scholar at Indian Institute of Technology Madras, Chennai. My research interests include Information theoretic aspects of Quantum Chaos in Quantum many-body systems.

Education

2018–2023 **Indian Institute of Technology Madras, Chennai**, *Ph.D.*, Physics, *CGPA:8.06/10.*
Mentor: Dr. Vaibhav Madhok

2016–2018 **Visvesvaraya National Institute of Technology, Nagpur**, *M.Sc.*, Physics, *CGPA:7.65/10.*
Advisor- Dr. M. S. Ram Karthik, Thesis: *The Schmidt Decomposition in Quantum Mechanics - Bipartite and Multipartite Quantum Systems*

2013–2016 **Andhra Loyola College (Autonomous), Vijayawada**, *B.Sc. (Maths, Physics, Statistics).*

2011–2013 **RamaKrishna Sahakara Junior College, Guntur**, *Intermediate (Maths, Physics, Chemistry).*
Percentage: 95.1

Courses

PhD.
Quantum Computation and Quantum Information, Non-linear Dynamical Systems, Advanced Quantum Computation and Quantum Information, Advanced Statistical Mechanics, Foundations of Theoretical Physics, Foundation of Experimental Physics.

M.Sc.
Classical Mechanics, Mathematical Physics, Computer programming in C, Quantum Mechanics, Electro Magnetism, Electronics, Electronics (Advanced), Characterisation of Materials, Material Science, Atomic and Molecular Physics, Solid State Physics, Thin Film Techniques, Nuclear and Particle Physics, Nano materials.

Programming Languages

Python

Julia

Mathematica

FORTRAN95

C

MATLAB

Typography

Latex

Beamer

Conferences/Summer Schools Attended

2019 **@ ICTS Banglore**.
BANGALORE SCHOOL ON STATISTICAL PHYSICS – X

2019 **@ ICTS Banglore**.
THERMALIZATION, MANY BODY LOCALIZATION AND HYDRODYNAMICS

Projects: Previous and Ongoing

2021-2022 **Universal operator growth hypothesis.**.

2021-2021 **Studies of out-of-time ordered correlators in kicked coupled top: Role of conservation law in the information scrambling.**.

2020-2021 **Protocol to measure out-of-time ordered correlators with a single bit of quantum information**.

2017-2018 **Schmidt decomposition in quantum mechanics: Bi-partite and multipartite quantum systems**.

Research Publications

1. Pg, Sreeram, Naga Dileep Varikuti, and Vaibhav Madhok. "Exponential speedup in measuring out-of-time-ordered correlators and gate fidelity with a single bit of quantum information." *Physics Letters A* 397 (2021): 127257.

Academic Service

2021–present **Lab Instructor**, *IIT Madras*, Laboratory for Synthesis and characterization of Functional Materials.

2020–2020 **Lab Instructor**, *IIT Madras*, Electrical Circuits Lab.

2019–2019 **Teaching Assistant**, *IIT Madras*, Quantum Computation and Quantum Information.

2019–2019 **Teaching Assistant**, *IIT Madras*, Electrodynamics.

2018–2018 **Teaching Assistant**, *IIT Madras*, Classical Mechanics.