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VAIBHAV N. PRAKASH

Researcher

Portfolio:
github.com/vaibh-pra

Interested in **open quantum dynamics** at various spatio-temporal scales(physical, chemical, biological). Experience with **cavity optomechanical systems, Gaussian quantum information theory and GKSL type master equations**. Knowledge of analytical and numerical techniques along with extensive use of **QuTiP, Mathematica, Python and Fortran**. Regular user of IBM quantum machines via **Qiskit**. Other interests include **neural networks and variational quantum circuits**.

EDUCATION

Doctor of Philosophy in Physics, Jawaharlal Nehru University	2022
Qualified GATE (Physics)	2016
Master of Science in Space and Atmospheric Sciences, Savitribai Phule Pune University	2005
Bachelor of Science in Physics(Major), Mumbai University	2003
University Fellowship, Jawaharlal Nehru University	2016 – 2021

SKILLS

Tools and Languages	Python, \LaTeX , Wolfram Mathematica, QuTiP, Git, FORTRAN, bash, C.
Quantitative Research	Mathematical modelling, Phenomenology.
Communication	English, Marathi, Hindi.

TEACHING EXPERIENCE

ROLE / Teaching assistant	2018
<i>Subatomic physics, Prof. Debashish Ghoshal</i>	
ROLE / Teaching assistant	2017 – 2018
<i>Laser Physics, Dr. Aranya Bhuti Bhattacharjee</i>	
ROLE / Subject matter expert	2014 – 2015
<i>Online maths tutor, Chegg.com</i>	

PUBLICATIONS

- “Negative effective mass, optical multistability and Fano line-shape control via mode tunnelling in double cavity optomechanical system.” *Vaibhav N.Prakash, Aranya B.Bhattacharjee*, Journal of Modern Optics, **66**, (2019).
<https://www.tandfonline.com/doi/full/10.1080/09500340.2019.1650208>
- “Fano profile in a novel double cavity-optomechanical system with harmonically bound mirrors.” *Vaibhav N.Prakash, Aranya B.Bhattacharjee*, Commun. Theor. Phys. **72**, 095501, (2020).
<https://iopscience.iop.org/article/10.1088/1572-9494/ab95fe>
- “Decoherence control of a single-photon optomechanical system in phase-sensitive reservoirs” *Vaibhav N.Prakash, Aranya B.Bhattacharjee*, in peer-review process.
<https://arxiv.org/abs/2111.05554>

ACTIVITIES

Student Faculty Committee Representative
Organized informal talks and discussions on the theme of “Science and Society” at the School of Physical Sciences, *Jawaharlal Nehru University*.
Open day poster presentation, *Jawaharlal Nehru University*.
Open day poster presentation, *Inter University Center for Astronomy and Astrophysics*.

REFEREES

Prof. Aranya Bhuti Bhattacharjee
Professor of Physics, Department of Physics,
BITS Pilani Hyderabad campus, Telangana, India
aranyabhuti@hyderabad.bits-pilani.ac.in

Prof. Joydeep Bagchi
Professor of Physics, Department of Physics and Electronics,
Christ University, Bangalore, India.
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