JYOTIRMAI SINGH

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EDUCATION

Stanford University 09/2019 — Present
Ph.D. Physics

University of California, Berkeley 08/2015 — 05/2019
B.A. Physics GPA 3.99/4.00
Highest Honors in Physics, Highest Distinction in General Scholarship

RESEARCH EXPERIENCE

Graduate Student Researcher, Stanford University 09/2019 — Present
Advisor: Kent Irwin *Stanford, CA*

- Developing high Q ($\sim 10^6$) LC resonators in the MHz range for the DM Radio Experiment.
- Fabricating novel quantum sensors for electromagetic signals below 300 MHz.

Undergraduate Researcher, Lawrence Berkeley National Laboratory 11/2015 — 05/2019
Advisor: Gabriel Orebi Gann *Berkeley, CA*

- Studied the optical properties of Tetraphenyl Butadiene (TPB) in the VUV spectrum in liquid argon (LAr) scintillator for future LArTPC experiments in Honours Thesis.
- Measured neutron production from atmospheric neutrino interactions at the Sudbury Neutrino Observatory.
- Produced new analysis code that enabled simultaneous propagation of uncertainties in position/energy resolutions for low and high energy regimes.

Undergraduate Researcher, SuperCDMS Collaboration, UC Berkeley 06/2018 — 05/2019
Advisor: Matt Pyle *Berkeley, CA*

- Developed algorithms to simulate new phonon physics in the SuperCDMS Monte Carlo, such as surface reflection downconversion.
- Optimised SuperCDMS Monte Carlo by implementing diffusive propagation of phonons to achieve substantial speedup.

AWARDS/HONOURS

Student Presentation Award - APS Group on Instrument & Measurement Science	2021
Phi Beta Kappa - UC Berkeley	2018
Isidore Pomerantz Scholarship - Department of Physics, UC Berkeley	2018
Berkeley Physics Undergraduate Research Scholar - Department of Physics, UC Berkeley	2017
Dean's Honours List - UC Berkeley	2015 — 2018
Kraft Award for Freshmen - UC Berkeley	2015

PUBLICATIONS

1. **Measurement of neutron production in atmospheric neutrino interactions at the Sudbury Neutrino Observatory**
   B. Aharmim *et al.* (SNO Collaboration), Phys. Rev. D 99 112007 (2019)

SCIENTIFIC TALKS

1. **LC Resonators in the DM Radio 50L Experiment** 04/2021
   APS April Meeting 2021

2. **Precision Metrology with Radiofrequency Quantum Upconverters** 03/2021
   APS March Meeting 2021

SKILLS

Programming Languages	Python, Java, C++, HTML/CSS
Natural Languages	Native: English, Hindi Intermediate Proficiency: French
Tools	Git, Vim, ROOT, Mathematica, LabVIEW, LaTeX, SolidWorks

TEACHING EXPERIENCE

Teaching Assistant, Stanford University Department of Physics 03/2020 — 06/2020
PHYS 43: Electricity and Magnetism *Stanford, CA*

- Teaching Assistant for PHYS 43 taught by Prof. Mark Kasevich.

Grader, UC Berkeley Department of Physics 03/2018 — 05/2018
PHYS 5B: Introductory Electromagnetism, Waves, and Optics *Berkeley, CA*

- Graded problem sets for Physics 5B, taught by Prof. Jonathan Wurtele.

Tutor, Computer Science Mentors at Berkeley 02/2017 — 05/2017
CS 61B: Data Structures *Berkeley, CA*

- Tutor for UC Berkeley's introductory Data Structures class, taught by Prof. Josh Hug.
- Held weekly sessions which involved presenting course topics and helping students with problems and conceptual questions.