



Pathak Shubham Parashar

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Publications — published

- 1 Towards an exact factorization of the molecular wave function — S. Parashar, Y. Sajeed, S. K. Ghosh. *Molecular Physics* 113(19–20): 3067–3072 (2015).

Publications — in preparation

- 1 Hydrodynamic and diffusive magneto-transport near a density perturbation in a two-dimensional electron gas — Parashar, Fogler (2025).
- 2 Imaging diffusive-to-ballistic crossover of magnetotransport in graphene — Krebs et al., incl. Parashar (2025).
- 3 Thermodynamics of the spin-splitting transition in quantum Hall effect — Parashar, Arovas, Fogler (2025).
- 4 Symplectic ferromagnetism and phase transitions in multi-component fermionic systems — Cai, Parashar, Wu (2025).

Education & Appointments

- 1 Ph.D., Physics — UC San Diego (2022–2025), Advisor: Michael M. Fogler
- 2 Researcher — UC San Diego (2017–2022), Advisors: Benjamin Grinstein, Congjun Wu
- 3 M.S., Physics — IISc Bangalore (2016–2017), Advisor: Rahul Pandit
- 4 B.S., Physics — IISc Bangalore (2012–2016), Advisor: Rahul Pandit

Experience

- 1 Research Intern — Bhabha Atomic Research Centre (Trombay, Mumbai, India); Mentor: Prof. Swapan Kumar Ghosh (2012–2013).
- 2 Research Intern — JAIST, Ishikawa, Japan; Supervisor: Ryo Maezono; MEXT Research Fellowship (2015–2016).

Selected Graduate Coursework

- 1 PHYS 230 (A+), PHYS 211B (A), PHYS 239 (Phases, A), PHYS 239 (Optics, A)
- 2 PHYS 215A/215B (QFT I & II, A/A+), PHYS 217 (Field Theory/RG, A)
- 3 PHYS 220 (Group Theory, A), PHYS 201 (Mathematical Physics, A+)

Teaching & Instruction

- 1 PHYS 500 — Introduction to Physics Teaching (UC San Diego), Grade: S (Fall 2017).
- 2 Subject areas: condensed matter & transport; quantum mechanics; quantum field theory; field theory/RG; group theory; mathematical physics.

Awards & Grants

- 1 KVPY Scholarship — 2012–2017
- 2 MEXT Research Fellowship (Japan) — 2015–2016
- 3 Bhadra Fellowship — 2025

- 4 NSF Grant — 2018–2020
- 5 UCSD Scholar's grant — 2017

Talks

- 1 Spin-split collapse in higher Landau levels — UC San Diego, 2023
- 2 Vorticity patterns — Columbia University (NY), 2022
- 3 Magneto-transport across local inhomogeneities — APS March Meeting, 2020
- 4 Non-associative operators inspired from string theory — APS March Meeting, 2019
- 5 Quantum double models in icosahedral structures — UC Irvine, 2018