Pathak Shubham Parashar

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RESEARCH INTERESTS

• Quantum Hall physics in higher Landau levels · Magneto-transport in high magnetic fields · Itinerant phases in correlated two-dimensional systems · In-spiral black hole merger in D > 5 dimensions

PUBLICATIONS — IN PREPARATION

Hydrodynamic and diffusive magneto-transport near a density perturbation in a two-dimensional electron gas
P. Shubham Parashar, M. M. Fogler · 2025

Imaging diffusive-to-ballistic crossover of magnetotransport in graphene
Z. J. Krebs, W. A. Behn, K. J. Smith, M. A. Fortman, K. Watanabe, T. Taniguchi, Pathak S. Parashar, M. M. Fogler, V. W. Brar · 2025

Thermodynamics of the spin-splitting transition in quantum Hall effect
Pathak S. Parashar, D. P. Arovas, M. M. Fogler · 2025

Symplectic ferromagnetism and phase transitions in multi-component fermionic systems
Zi Cai, Pathak S. Parashar, Congjun Wu · 2025

EDUCATION & APPOINTMENTS

2022–2025 — **Ph.D., Physics**, University of California San Diego
Advisor: Michael M. Fogler
Focus: quantum Hall physics in higher Landau levels; magneto-transport

2017–2022 — **Researcher**, University of California San Diego
Advisors: Benjamin Grinstein, Congjun Wu
Theory & computation across 2D correlated systems and transport

2016–2017 — **M.S., Physics**, Indian Institute of Science, Bangalore
Advisor: Rahul Pandit
Condensed matter theory; hydrodynamic phenomena

2012–2016 — **B.S., Physics**, Indian Institute of Science, Bangalore
Advisor: Rahul Pandit
Foundations in theoretical & computational physics

TALKS & PRESENTATIONS

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

AWARDS & GRANTS

Bhadra Fellowship (2025) · NSF Grant (2018–2020) · UCSD Scholar's grant (2017)