Pratik Rath

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Work

University of California, Santa Barbara 2020 - 2023(expected)
Postdoctoral Researcher in physics
Co-sponsored by It From Qubit (Simons) Collaboration and MURI Collaboration

Education

University of California, Berkeley 2016 - 2020
PhD student in physics - Academic advisor: Professor Yasunori Nomura; GPA 3.95/4.0

Perimeter Institute for Theoretical Physics 2015-2016
Master of Science: Perimeter Scholars' International - Research Advisor : Robert C. Myers

Indian Institute of Technology, Kanpur 2011-2015
Bachelor of Science: Major in Physics; GPA 9.9/10.0

Awards

- Ratan Swaroop Memorial award for best all round performance at IIT Kanpur 2015
- General Proficiency Medal for best academic performance in Physics, IIT Kanpur 2015
- Academic Excellence Awards, IIT Kanpur 2011-2015

Publications

- Chris Akers, Sergio Hernández-Cuenca, and Pratik Rath. Quantum Extremal Surfaces and the Holographic Entropy Cone. 2021
- Chitraang Murdia, Yasunori Nomura, and Pratik Rath. Coarse-Graining Holographic States: A Semiclassical Flow in General Spacetimes. *Phys. Rev. D*, 102(8):086001, 2020
- Mudassir Moosa, Pratik Rath, and Vincent Paul Su. A Rényi quantum null energy condition: proof for free field theories. *JHEP*, 01:064, 2021
- Raphael Bousso, Venkatesa Chandrasekaran, Pratik Rath, and Arvin Shahbazi-Moghaddam. Gravity dual of Connes cocycle flow. *Phys. Rev. D*, 102(6):066008, 2020
- Venkatesa Chandrasekaran, Masamichi Miyaji, and Pratik Rath. Including contributions from entanglement islands to the reflected entropy. *Phys. Rev. D*, 102(8):086009, 2020
- Chris Akers and Pratik Rath. Entanglement Wedge Cross Sections Require Tripartite Entanglement. *JHEP*, 04:208, 2020
- Chitraang Murdia, Yasunori Nomura, Pratik Rath, and Nico Salzetta. Comments on holographic entanglement entropy in TT deformed conformal field theories. *Phys. Rev.*, D100(2):026011, 2019
- Chris Akers and Pratik Rath. Holographic Renyi Entropy from Quantum Error Correction. *JHEP*, 05:052, 2019
- Yasunori Nomura, Pratik Rath, and Nico Salzetta. Pulling the Boundary into the Bulk. *Phys. Rev.*, D98(2):026010, 2018
- Yasunori Nomura, Pratik Rath, and Nico Salzetta. Spacetime from Unentanglement. *Phys. Rev.*, D97(10):106010, 2018
- Yasunori Nomura, Pratik Rath, and Nico Salzetta. Classical Spacetimes as Amplified Information in Holographic Quantum Theories. *Phys. Rev.*, D97(10):106025, 2018
- Dean Carmi, Robert C. Myers, and Pratik Rath. Comments on Holographic Complexity. *JHEP*, 03:118, 2017

Talks

- KITP High Energy Seminar
  "Page Curve For Reflected Entropy" October 2020
- Dual Mysteries of Gauge Theory and Gravity Conference
  "Page Curve For Reflected Entropy" October 2020
- Brandeis University High Energy Seminar
  "Page Curve For Reflected Entropy" September 2020
- Quantum Gravity and Information Potsdam virtual seminar
  "Holographic Renyi Entropy from Quantum Error Correction" February 2019
- Berkeley string seminar
  "Holographic Renyi Entropy from Quantum Error Correction" February 2019
- Pacific Coast Gravity Meeting
  "Pulling the Boundary Into the Bulk" March 2018

Conferences and workshops

- Gravitational Holography Program
  IAS, Princeton January 2020
- Geometry from the Quantum
  KITP, Santa Barbara January 2020
- Workshop on Qubits and Spacetime
  IAS, Princeton December 2019
- Quantum Information in Quantum Gravity 5
  UC Davis August 2019
- TTbar and Other Solvable Deformations of Quantum Field Theories
  SCGP, Stony Brook April 2019
- From Qubits to Spacetime PITP
  IAS, Princeton July 2018
- It From Qubit Complexity Workshop
  Stanford March 2018
- It From Qubit Summer School
  Perimeter Institute July 2016
- Condensed Matter Phyiscs and Topological Field Theory
  Perimeter Institute October 2015
- Non-commutative Geometry and Physics
  Perimeter Institute September 2015
- Quantum Information in Quantum Gravity 2
  Perimeter Institute August 2015

Teaching experience

University of California, Berkeley 2016 - 2020
Graduate Student Instructor

- 137A Undergraduate quantum mechanics I Fall 2019
- 137B Undergraduate quantum mechanics II Spring 2019
- 137A Undergraduate quantum mechanics I Fall 2018
- 7C Introductory modern physics Spring 2018
- 7A Introductory mechanics Fall 2017
- 8A Introductory mechanics Spring 2017
- 8A Introductory mechanics Fall 2016

International Physics Olympiad 2015
Certified Grader

Academic Mentor Programme, IIT Kanpur 2012 - 2014
Physics and Math Teacher

- Tutored undergraduate students in physics and mathematics

Yukti Coaching Classes 2012
Physics and Math Teacher

- Tutored high school students in physics and mathematics

Personal information

- Nationality: Indian
- Languages: English (fluent), Odia (native), Hindi (fluent)

References

- Professor Yasunori Nomura ynomura@berkeley.edu
- Professor Raphael Bousso rbousso@lbl.gov
- Professor Robert C. Myers rmyers@perimeterinstitute.ca