

Employment

Assistant professor, Boston University, 2016 - Present

Postdoctoral fellow, Perimeter Institute, 2013 - 2016

Education

Ph.D. Physics, Princeton University, 2008 - 2013

Thesis title: Entanglement and dynamics in many-body systems

Advisor: Shivaji L. Sondhi

B. Tech in Electrical Engineering, Indian Institute of Technology Madras, 2004 - 2008

Advisor: Harishankar Ramachandran

Awards and Honors

Centennial Fellowship, Princeton, 2008 - 2013

Summer fellow, Indian Academy of Sciences, 2006

Certificate of Merit (All India Rank 92), Indian Institute of Technology, 2004

Invited Talks

- Workshop: Breakdown of ergodicity in quantum systems: from solids to synthetic matter, The Royal Society (London), Feb 2016.
- Workshop: Strongly correlated matter: Present and Future, Weizmann Institute, Dec 2016.
- Colloquium: "Schrödinger's clowder: Entanglement in many-body systems", Nov 2016.
- Conference: Mathematical Results in Quantum Physics, Georgia Tech, Oct 2016.
- Invited Session: March Meeting, Baltimore, 2016.
- Public Lecture: "Getting Stuck: Shaking Up Statistical Physics", KITP, Oct 2015.
- Conference: Aspects and Applications of Many-Body Localization, KITP, Nov 2015.
- Conference: Frustration, Disorder and Localization: Statics and Dynamics, ICTP, Sept 2015.
- Workshop: Non-Equilibrium Quantum Frontier, Princeton, Aug 2015.
- Conference: Closing the entanglement gap: Quantum information, quantum matter, and quantum fields, KITP, June 2015.

- Conference: Aspects of Non-Equilibrium Dynamics in Quantum Computation, CUNY, April 2015.
- Conference: Many-body dynamics out of equilibrium, MPIPKS Dresden, March 2015.
- Conference: Quantum Science, Gordon Research Seminar, Stonehill College, July 2014.
- Conference: Quantum Matter, Benasque, June 2014.
- Invited Session: March Meeting, Denver, 2014.
- Conference: Topological Matter Out of Equilibrium, MPIPKS (Dresden), March 2014.
- Conference: Emergence in complex systems, Perimeter, Feb 2014.
- Conference: Frontiers of quantum condensed matter physics, CUNY, March 2012.

Invited Seminars

- Boulder, May 2016.
- Northwestern, March 2016.
- Michigan State, March 2016.
- Rutgers, Feb 2016.
- MIT, Feb 2016.
- University of Oregon, Feb 2016.
- University of Washington, Feb 2016.
- University of Alberta, Feb 2016.
- Boston University, Jan 2016.
- Princeton, Jan 2016.
- UCSD, Jan 2016.
- UMass Amherst, Dec 2015.
- UCL, Aug 2015.
- Oxford, Aug 2015.
- Cambridge, Aug 2015.
- UIUC, Nov 2014.
- MPIPKS (Dresden), July 2014.
- University of Toronto, November 2013.
- Boston University, May 2013.
- Los Alamos National Laboratory, July 2013.

- Perimeter, Jan 2013.
- KITP, August 2012.
- Harvard, April 2012.
- IISc (Bangalore), Jan 2012.
- Harvard, April 2011.

Organizational Roles

- Organizer: CUNY workshop on “Dynamics and hydrodynamics of certain quantum matter”, Mar 20-23, 2017.
- Organizer: Aspen winter program on “Quantum dynamics: from models to materials”, Jan 15-21, 2017.
- Organizer: KITP program on “Many-body Localization”, Oct 12-Dec 18, 2015.
- Organizer: “Quantum many-body dynamics” workshop, Perimeter Institute, May 12-16, 2014.
- Organizer: Princeton Summer School in Condensed Matter Physics, 2009-2012.

Teaching

Professor

- Introduction to solid state physics PY543, Spring 2017

Lecturer

- Condensed matter module of Perimeter Scholars Initiative (PSI), Fall 2013

Teaching assistant

- Integrated science ISC 231, Spring 2010
- General physics I PHY 103, Fall 2010
- Advanced Electromagnetism PHY 304 Spring 2011
- Thermal physics PHY 301, Fall 2011
- Quantum Mechanics PHY 208, Spring 2013

University Service

- Condensed matter/biophysics seminar series organizer (2016-2017)
- Condensed matter experimental search committee (2016-2017)
- Graduate student recruitment committee (2016-2017)

Group members

- Dr. Philip Crowley, Postdoctoral associate (2017-Present)

Publications

1. "Localization and symmetry breaking in the quantum quasiperiodic Ising glass", A. Chandran, C.R. Laumann, arXiv:1702.03302 (2017).
2. "The eigenstate thermalization hypothesis in constrained Hilbert spaces: a case study in non-Abelian anyon chains," A. Chandran, M.D. Schulz, F.J. Burnell. Phys. Rev. B 94, 235122 (2016).
3. "Universal corner entanglement of Dirac fermions and gapless bosons from the continuum to the lattice," J. Helmes, L. Sierens, A. Chandran, W. Witczak-Krempa, R. Melko. Phys. Rev. B 94, 125142 (2016).
4. "Many-body localization beyond eigenstates in all dimensions," A. Chandran, A. Pal, C.R. Laumann, A. Scardicchio. Phys. Rev. B 94, 144203 (2016).
5. "When is an area law not an area law?," A. Chandran, C.R. Laumann, R.D. Sorkin. Entropy 18, 240 (2016).
6. "Finite size scaling bounds on many-body localized phase transitions," A. Chandran, C.R. Laumann, V. Oganesyan. arXiv:1509.04285 (2015).
7. "Interaction stabilized steady states in the driven $O(N)$ model", A. Chandran, S.L. Sondhi. Phys. Rev. B 93, 174305 (2016).
8. "Emergent Coulombic criticality and Kibble-Zurek scaling in a topological magnet," J. Hamp, A. Chandran, R. Moessner, C. Castelnovo. Phys. Rev. B 92, 075142 (2015)
9. "A semi-classical limit for the many-body localization transition," A. Chandran, C.R. Laumann. Phys. Rev. B 92, 024301 (2015).
10. "Local integrals of motion and the logarithmic lightcone in many-body localized systems," I.H. Kim, A. Chandran, D.A. Abanin. arXiv:1412.3073 (2014). In review.
11. "Spectral tensor networks for many-body localization," A. Chandran, I.H. Kim, J. Carrasquilla, D.A. Abanin, G. Vidal. Phys. Rev. B 92, 024201 (2015).
12. "Constructing local integrals of motion in the many-body localized phase," A. Chandran, I.H. Kim, G. Vidal, D.A. Abanin. Phys. Rev. B 91, 085425 (2015).
13. "Eigenstate Thermalization and Representative States on Subsystems," V. Khemani, A. Chandran, H. Kim, S.L. Sondhi. Phys. Rev. E 90, 052133 (2014).
14. "Periodically driven ergodic and many-body localized quantum systems," P. Ponte, A. Chandran, Z. Papić, D.A. Abanin. Annals of Physics 353, 196 (2015).
15. "How universal is the entanglement spectrum?" A. Chandran, V. Khemani, S.L. Sondhi. Phys. Rev. Lett. 113, 060501 (2014).

16. "Many-body localization and symmetry protected topological order," A. Chandran, V. Khemani, C.R. Laumann, S.L. Sondhi. *Phys. Rev. B* 89, 144201 (2014).
17. "On equilibration and coarsening in the quantum $O(N)$ model at infinite N ," A. Chandran, A. Nanduri, S.S. Gubser, S.L. Sondhi. *Phys. Rev. B* 88, 024306 (2013).
18. "Kibble-Zurek scaling and string-net coarsening in topologically ordered systems," A. Chandran, F. Burnell, V. Khemani, S.L. Sondhi. *J. Phys.: Condens. Matter* 25, 404214 (2013).
19. "Kibble-Zurek Problem: Universality and the scaling limit," A. Chandran, A. Erez, S.S. Gubser, S.L. Sondhi. *Phys. Rev. B* 86, 064304 (2012).
20. "Real space entanglement spectra of quantum Hall states," A. Sterdyniak, A. Chandran, N. Regnault, B.A. Bernevig, P. Bonderson. *Phys. Rev. B* 85, 125308 (2012).
21. "Bulk-edge correspondence in entanglement spectra," A. Chandran, M. Hermanns, N. Regnault, B.A. Bernevig. *Phys. Rev. B* 84, 205136 (2011).
22. "Haldane statistics in the finite-size entanglement spectra of $1/m$ fractional quantum Hall states," M. Hermanns, A. Chandran, N. Regnault, B.A. Bernevig. *Phys. Rev. B* 84, 121309 (2011).
23. "Characterization of a qubit Hamiltonian using adaptive measurements in a fixed basis," A. Sergeevich, A. Chandran, J. Combes, S.D. Bartlett, H.M. Wiseman. *Phys. Rev. A* 84, 052315 (2011).
24. "Regional versus global entanglement in resonating-valence-bond states," A. Chandran, D. Kaszlikowski, A. Sen (De), U. Sen, V. Vedral. *Phys. Rev. Lett.* 99, 170502 (2007).