

Stanford



Xiaoliang Qi

Professor of Physics

CONTACT INFORMATION

- **Administrative Contact**

Donald J. Abuy

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Bio

BIO

My current research interest is the interplay of quantum entanglement, quantum gravity and quantum chaos. The characterization of quantum information and quantum entanglement has provided novel understanding to space-time geometry, and relate the dynamics of chaotic many-body systems to the dynamics of space-time, i.e. quantum gravity theory. Based on recent progress in holographic duality (also known as AdS/CFT), my goal is to use tools such as tensor networks and solvable models to provide more microscopic understanding to the emergent space-time geometry from quantum states and quantum dynamics.

I am also interested in topological states and topological phenomena in condensed matter systems.

You can find my recent research topics in some talks online:

<http://online.kitp.ucsb.edu/online/chord18/opgrowth/>

https://www.youtube.com/watch?v=__9VBaLfc6Y&t=42s

http://online.kitp.ucsb.edu/online/qinfo_c17/qi/

ACADEMIC APPOINTMENTS

- Professor, Physics

ADMINISTRATIVE APPOINTMENTS

- Professor, Stanford University, (2019- present)
- Associate Professor, Physics, Stanford University, (2014-2018)
- Assistant Professor, Physics, Stanford University, (2009-2014)
- Postdoctoral Researcher, Microsoft Station Q, UC Santa Barbara, (2009-2010)
- Research Associate, Stanford Linear Accelerator Center, (2007-2009)

HONORS AND AWARDS

- Simons Investigator, Simons Foundation (2018)

- The New Horizons in Physics Prize, The Breakthrough Prize Foundation (2015)
- Sackler International Prize, Physics, Raymond and Beverly Sackler, Tel Aviv University (2014)
- Hermann Kummel Early Achievement Award, in Many-Body Physics, International Conference Advisory Committee (2011)
- Packard Fellowship, David and Lucile Packard Foundation (2011)
- Sloan Fellowship, Sloan Foundation (2010)

PROFESSIONAL EDUCATION

- Ph.D., Institute for Advanced Study, Tsinghua University , Physics (2007)
- B.S., Tsinghua University , Physics (2003)

Teaching

COURSES

2021-22

- Condensed Matter Theory II: PHYSICS 373 (Aut)

2020-21

- Condensed Matter Seminar: APPPHYS 470 (Aut, Win, Spr)
- Condensed Matter Theory I: PHYSICS 372 (Win)
- Quantum Mechanics II: PHYSICS 131 (Spr)

2019-20

- Quantum Mechanics II: PHYSICS 131 (Spr)

2018-19

- Quantum Mechanics II: PHYSICS 131 (Spr)
- Topics in Modern Condensed Matter Theory I: Topological States of Matter: PHYSICS 470 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Katherine Ding, Eli Fox, Kejun Xu

Postdoctoral Faculty Sponsor

Nick Hunter-Jones

Doctoral Dissertation Advisor (AC)

Shangnan Aaland Zhou

Doctoral Dissertation Co-Advisor (AC)

Jacob Marks

Doctoral (Program)

Zach Bogorad, Dylan Britt, Vladimir Calvera, Aditya Cowsik, Kevin Crust, Olivia Ghosh, Alana Gudinas, Heesoo Kim, Gabriel Moreau, Adel Rahman, David Saykin, Sungyeon Yang, Mark Zic