

Princeton Center for Theoretical Science

The Princeton Center for Theoretical Science is dedicated to exploring the frontiers of theory in the natural sciences. Its purpose is to promote interaction among theorists and seed new directions in research, especially in areas cutting across traditional disciplinary boundaries.

The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus "science neighborhood". The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

Faculty Fellows

Paul Steinhardt, Director
Igor Klebanov, Associate Director
Andrei Bernevig
Duncan Haldane
Andrew Houck
Eve Ostriker
Thanos Panagiotopoulos
Frans Pretorius
Ned Wingreen

Center Postdoctoral Fellows

Ricard Alert-Zenon 2018-2021
Nathan Benjamin 2018-2021
Fani Dosopoulou 2018-2021
Anna Frishman 2016-2019
Daniel Lecoanet 2016-2019
Biao Lian 2017-2020
Abhinav Prem 2018-2021
Pierre Ronceray 2016-2019
Yizhi You 2017-2020
Xinan Zhou 2018-2021

To find out more about Center Postdoctoral Fellowships and Programs see:
<http://pcts.princeton.edu/pcts>



Fracton Phases of Matter & Topological Crystalline Order

December 3-5, 2018

PCTS Seminar Room
Jadwin Hall, Fourth Floor, Room 407

Program Organizers

Fiona Burnell, Biao Lian, Abhinav Prem,
Shivaji Sondhi and Yizhi You

Fracton Phases of Matter & Topological Crystalline Order

Monday, December 3, 2018

08:30 – 09:00 Light Breakfast

09:00 – 10:00 “Fractons: A Guided Tour”
Michael Pretko

10:00 – 11:00 A New Gapless Fracton Phase, and its Dual Description
Sagar Vijay

11:00 – 11:30 Coffee break

11:30 – 12:30 “Un gauging quantum error-correcting codes”
Beni Yoshida

12:30 – 2:00 Lunch at PCTS

2:00 – 3:00 “Exotic braiding statistics in (3+1) dimensions”
Shinsei Ryu

3:00 – 4:00 “Topological quantum many-body scars”
Titus Neupert

4:00 – 4:30 Coffee Break

4:30 – 5:30 “Foliated Field Theory and String-Membrane-Net
Condensation of Fracton Order”
Kevin Slagle

Tuesday, December 4, 2018

08:30 – 09:00 Light Breakfast

09:00 – 10:00 “On automorphisms of local algebras.”
Jeongwan Haah

10:00 – 11:00 “Fracton Dynamics”
Rahul Nandkishore

11:00 – 11:30 Coffee break

11:30 – 12:30 “Foliated Fracton Phases”
Xie Chen

Fracton Phases of Matter & Topological Crystalline Order

Tuesday, December 4, 2018 (cont.)

12:30 – 2:00 Lunch at PCTS

2:00 – 3:00 “Lattice homotopy: some applications”
Adrian Po

3:00 – 4:00 “Higher rank chern-simons theory”
Yizhi You

4:00 – 4:30 Coffee Break

4:30 – 5:30 Contributed Talks by, **Dominic Else, Wilbur Shirley,**
and **Dominic Williamson.**

Wednesday, December 5, 2018

08:30 – 09:00 Light Breakfast

09:00 – 10:00 Generalized Gauge Theories and Fractons
Daniel Bulmash

10:00 – 11:00 “Fracton fusion and statistics”
Michael Hermele

11:00 – 11:30 Coffee break

11:30 – 12:30 “Cage-Net Fracton Models”
Abhinav Prem

12:30 – 2:00 Lunch at PCTS

2:00 – 3:00 “Fractonicity from Elasticity”
Leo Radzihovsky

3:00 Continue informal discussions at PCTS