

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

Ned Wingreen, Acting Director
Shinsei Ryu, Acting Associate Director
Igor Klebanov, Director
Jeremy Goodman
Duncan Haldane
Andrew Houck
Mariangela Lisanti
Thanos Panagiotopoulos
Frans Pretorius
Silviu Pufu

Center Postdoctoral Fellows

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|------------------------------------|-----------------------------|
| Vir Bulchandani 2020-2023 | Andrew Chael 2019-2022 |
| Amos Chan 2019-2022 | Minjae Cho 2021-2024 |
| Giorgio Cipolloni 2021-2024 | Scott Collier 2020-2023 |
| Trevor GrandPre 2022-2024 | Brooke Husic 2020-2023 |
| Alejandro Martinez-Calvo 2021-2024 | Elias Most 2020-2023 |
| Vladimir Narovlansky 2019-2022 | Sabrina Pasterski 2019-2022 |
| Carolyn Raithel 2020-2023 | Frank Schindler 2020-2023 |
| Nicole Shibley 2021-2024 | |

To find out more about Center Postdoctoral Fellowships and Programs

see: <https://pcts.princeton.edu>



Ice-Ocean Interactions on Icy Moons in the Solar System

April 11-13, 2022

Virtual on Zoom & In person

Program Organizers

Jeremy Goodman
Nicole Shibley

Ice-Ocean Interactions on Icy Moons in the Solar System

Monday, April 11, 2022

9:00-9:30 am Continental Breakfast at PCTS

9:30-9:40 am Welcome and Opening Remarks

9:40-10:15: **Samantha Trumbo (in-person)**
“The surface of Europa: A window to the ocean below?”

10:15-10:50: Break

10:50-11:25: **Francis Nimmo (virtual)**
“Probing ocean dynamics with spacecraft observations”

11:30-12:05: **Samuel Howell**
“Exploring Europa with the Europa Clipper Mission”

12:05-1:30: Lunch at PCTS

1:30-2:05: **Malte Jansen (virtual)**
“Energetic constraints for ocean circulation on icy moons”

2:10-2:45: **Steven Vance (in-person)**
“Revealing the salty secrets of icy ocean worlds”

2:45-3:20: Break

3:20-3:55: **Eli Tziperman (virtual)**
“Interactions of Europa’s dynamic ocean and its icy shell’s flow and thickness”

4:00-4:35: **Wanying Kang (in-person)**
“Interactions between the ice shell and subsurface ocean on icy satellites”

4:35-5:00: Break

5:00-6:30: Poster session at PCTS

Ice-Ocean Interactions on Icy Moons in the Solar System

Tuesday, April 12, 2022

9:15-9:40 am Continental Breakfast at PCTS

9:40-10:15: **Britney Schmidt (in-person)**
“Ocean worlds in our backyard”

10:15-10:50: Break

10:50-11:25: **Andrew Thompson (virtual)**
“Water mass transformation and overturning circulations of ice-covered oceans”

11:30-12:05: **Krista Soderlund (in-person)**
“Global Ocean Dynamics of Outer Solar System Satellites: DNS Models of Rotating Convection”

12:05-1:30: Lunch

1:30-2:05: **Sinead Farrell (virtual)**
“Detecting sea ice processes and properties with satellite remote sensing”

2:10-2:45: **Dustin Schroeder (in-person)**
“Constraining ice-shell temperatures with radar attenuation in the absence of continuous reflecting interfaces”

2:45-3:20: Break

3:20-3:55: **John Wettlaufer (virtual)**
“Interactions between flows and phase boundaries and their implications near and far”

4:00-4:50: Breakout groups

4:50-5:15: Large group discussion

Ice-Ocean Interactions on Icy Moons in the Solar System

Wednesday, April 13, 2022

9:15-9:40 am Continental Breakfast at PCTS

9:40-10:15: **Olga Sergienko (in-person)**
“Feedbacks in ice-shelf/ocean interactions”

10:20-10:55: **Edwin Kite (virtual)**
Are Enceladus’ tiger stripes the key to Europa’s double ridges?

10:55-11:30: Break

11:30-12:30: **Habitability/Astrobiology Panel**
(Jacob Buffo – in person; Morgan Cable – virtual; Samuel Howell – virtual; Juan Lora – virtual; Steven Vance – in person)

12:30-1:30: Lunch at PCTS

1:30-2:15: Breakout groups

2:15-3:00: Final group discussion + closing remarks