



CRITICAL TRANSITIONS IN SOCIO-ECOLOGICAL SYSTEMS

FEBRUARY 17-19, 2025.

PCTS, ROOM 407 JADWIN HALL.

Organizers: Guillaume Falmagne, George Hagstrom, Simon Levin

Advisory Committee: Pablo DeBenedetti, Miguel Centeno, Nigel Goldenfeld, Joel Lebowitz, Naomi Leonard



This workshop will discuss critical transitions, which bridge Physics and Mathematics where it originated to its current applications in Biology, Ecology, Sociology, Economics, and Earth sciences. The concept of a macroscopic change after a small perturbation close to a threshold has appealed to many disciplines beyond Physics. Among other adaptations, "regime shifts" in ecology and "tipping points" in Earth sciences and sociology provide valuable perspectives, especially when the non-linearities and the urgency of action must be underlined. The goal of this workshop is to open new research paths by reconciling the applied usage of critical transitions with the framework of statistical physics and novel data analysis techniques.

Invited talks from renowned experts will delve into both foundational principles as well as recent applications. The workshop will also feature flash talks from members of the Earth Resilience and Sustainability Initiative, and discussion sessions will be dedicated to proposing future interdisciplinary collaborations.

CLICK HERE OR SCAN QR

CODE FOR:

REGISTRATION is required and free for active researchers, faculty, postdocs and graduate students.

APPLICATION for Flash Talks (deadline January 21)

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



INVITED SPEAKERS

Luis Amaral

Albert-László Barabási

Juan Bonachela

Jean-Philippe Bouchaud

Markus Brunnermeier

Raphaella Burioni

Sara Constantino

Raissa D'Souza

Jonathan Donges

Michelle Girvan

Nigel Goldenfeld

Alan Hastings

Elizabeth Krueger

Naomi Leonard

Cristina Marchetti

Ryan McGranaghan

Carmen Miguel

Felipe Montealegre-Mora

Miguel Muñoz

Amilcare Porporato

Didier Sornette

Jin Wang

Elke Weber

Ned Wingreen