

Collective Dynamics and Information Processing in Neural Systems

Satellite meeting of [StatPhys29](#)



PROGRAM

30 June - 2 July 2025 · Ca' Bottacin, Venice, Italy

A fundamental question in neuroscience is how populations of neurons coordinate to perform functions and sustain optimal information processing and computation. While electrophysiological recordings in behaving animals have provided significant insights into how individual neurons encode information, the role played by collective neuronal dynamics in information processing and brain function remains largely unexplored.

This workshop aims to strengthen the interdisciplinary connection between neuroscience and statistical physics by bringing together physicists and neuroscientists working on collective dynamics, cognition, and behavior. The workshop will provide a platform for discussing recent theoretical, computational, and experimental advances regarding the role of neural ensembles in brain function. Designed to foster discussion and collaboration, the event will emphasize the inclusion of early-career researchers and ensure diversity among participants, maintaining a balance between physicists, theoretical neuroscientists, and experimental neuroscientists.

Keynote Speakers

Stefano Fusi
Columbia University

Athena Akrami
Sainsbury Wellcome Centre, UCL

Dietmar Plenz
National Institute of Mental Health

Invited Speakers

Raffaella Burioni
University of Parma

Gaia Tavoni
Washington University in St Louis

Federico Stella
Donders Institute

Brice Bathellier
Institut de l'Audition, Paris

Henrik J. Jensen
Imperial College, London

Luca Mazzucato
University of Oregon

Johannes Felsenberg
FMI Basel

Olivier Marre
Institut de la Vision, Paris

Gianluigi Mongillo
Institut de la Vision, Paris

Carlotta Martelli
University Mainz

Ana Paula Millán Vidal
University of Granada

Nima Dehghani
MIT

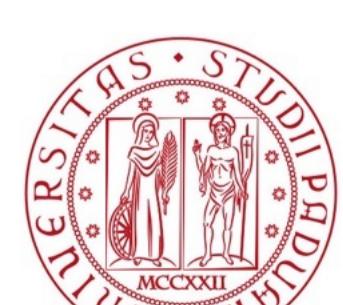
Francesca Mastrogiovanni
Champalimaud Foundation

Gašper Tkačik
IST Austria

Michele Allegra
University of Padova

Organizing Committee

Fabrizio Lombardi, Lucilla de Arcangelis, Serena Di Santo, Samir Suweis,
Ulisse Ferrari, Elisa Tentori, Achille Giacometti, Guido Caldarelli



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