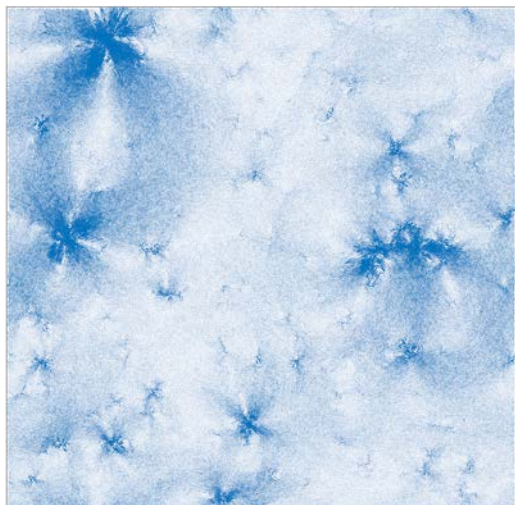




The Ben May Center for Chemical Theory and Computation

Computational Condensed Matter



The spatial distribution of low-energy quasi-localized excitations in a computer glass

At a Glance

WHAT Condensed **two-week course** (10 days, 09:00-17:00 each) on Computational Condensed Matter

WHO **Prof. Edan Lerner** (University of Amsterdam)
Dr. Natalia Chepiga (Delft University of Technology)

WHERE Weizmann Institute of Science, Weimann School of Science (WSoS), Room B

WHEN **Aug 03- Aug 14, 2025**
Sunday-Thursday (each week)
09:00-17:00 each day

ACADEMIC CREDIT 2 credit points will be given to Physics and Chemistry students

About the Course

Modern understanding of collective many-body phenomena in condensed matter Physics and Chemistry heavily relies on computational approaches. Consequently, acquiring basic knowledge of the cutting-edge computational toolkit – both classical and quantum – and the associated conceptual framework is an essential part of current scientific education.

This course is an intensive 10-day introduction to the fundamentals required to address state-of-the-art problems in **many-body classical and quantum systems**, using computational approaches. The course includes a mix of theoretical lectures, exercises and hands-on practical computer calculations.

About the Instructors

Prof. Lerner is a computational soft matter physicist, with extensive research and teaching experience. His research focuses on understanding the statistical physics of deformation and flow of disordered materials. Prof. Lerner will lead the classical part of the course.

Dr. Chepiga is a quantum computational physicist and a developer of tensor-network algorithms. Her research focuses on quantum phase transitions and novel critical phenomena. She regularly teaches at international PhD schools. Dr. Chepiga will lead the quantum part of the course.

Who Can Attend

This course is open to up to 26 Physics and Chemistry students (MSc and PhD) and postdocs. Admittance priority will be given to early-stage PhD students. Previous graduate-level courses on Quantum Mechanics and Statistical Physics/Thermodynamics are required, as well as basic knowledge of Matlab and preferably of a low-level programming language (such as C or Fortran).

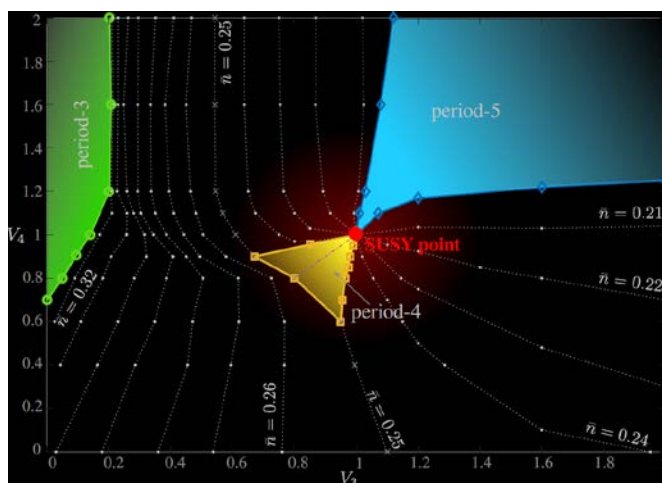
Additional details and Registration

The complete course details are available at the WSoS online course system, see [this link](#) (Course 20251192)

Weizmann students should register through the WSoS online course system. Weizmann postdocs and non-Weizmann students can apply by sending an e-mail to: Neta Singer neta.singer@weizmann.ac.il

Commitment

All accepted participants commit themselves to attend the whole course – **both the classical and quantum parts, with no exception** – and to provide feedback on the course.



Emergence of Supersymmetry in a ladder of constrained fermions