

Boulder School for Condensed Matter and Materials Physics

Frustrated and Disordered Systems

July 3-28, 2017

Disordered and frustrated systems comprise a vibrant research area in condensed matter physics with applications in fields ranging from mathematics to biology. At their core, these systems share universal features--such as rough free energy landscapes and rich sets of phase transitions--that can be understood and unified with ideas from physics. This comprehension largely arises from the study of spin glasses, which since the 1980s has led to a rich array of concepts, methods and tools that describe systems as diverse as piles of grains, biological tissues and computer algorithms. The 2017 Boulder School will survey the intimate connection between these seemingly different problems, and introduce key notions in the physics of disordered systems.

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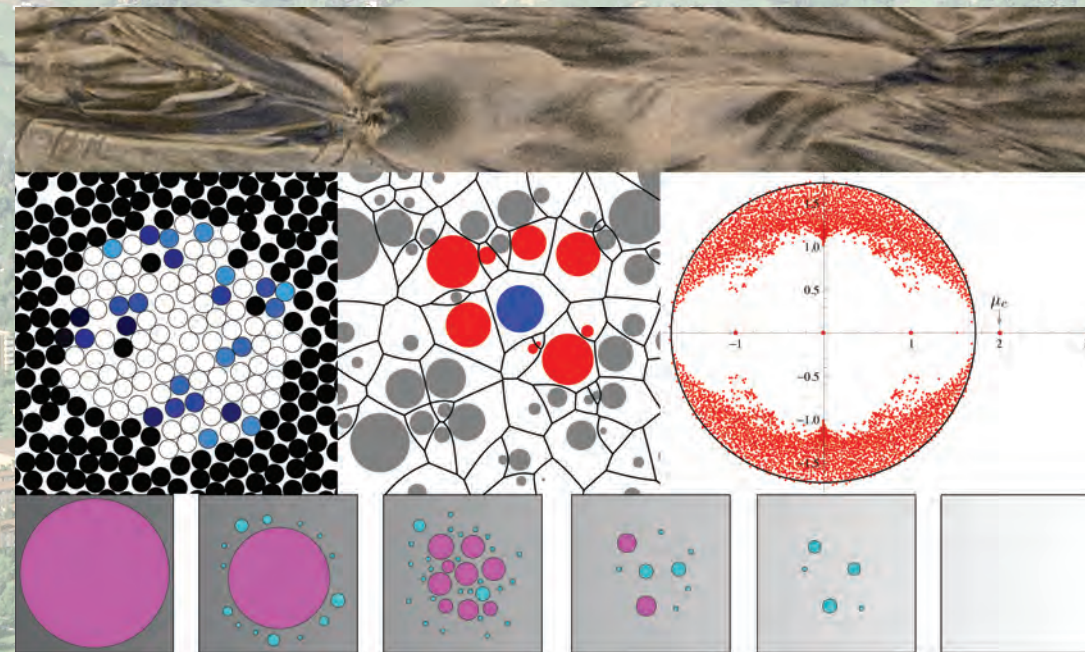


Photo Credits: Complex mixing of sand, E. Corwin; Point-to-set correlation in supercooled liquid, P. Charbonneau lab; Additively weighted Voronoi diagram, E. Corwin lab; Spectrum of the non-backtracking matrix of a graph with two communities, L. Zdeborová et al.; and Clustering and phase transition for random constraint satisfaction problems, L. Zdeborová et al.

Scientific Organizers:

Patrick Charbonneau (Duke)

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Francesco Zamponi (ENS/CNRS)

Lenka Zdeborová (CEA Saclay/CNRS)

Director: Leo Radzihovsky (Boulder)

The school will pay for most local expenses, and there are travel grants available for participants from U.S. universities. Students and postdocs interested in participating should submit an electronic application by the January 15 deadline. The application form, and detailed information regarding housing, travel and financial support are available at

<http://boulderschool.yale.edu/>

The Boulder School in Condensed Matter and Materials Physics provides expert training, not usually available within the traditional system of graduate and post-graduate education, for advanced graduate students and postdoctoral researchers working in condensed matter physics, materials science and related fields. The School is supported by the National Science Foundation, with additional funding provided by the University of Colorado, and meets annually during July in Boulder, Colorado.

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