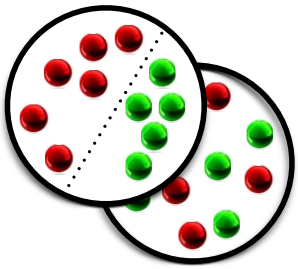
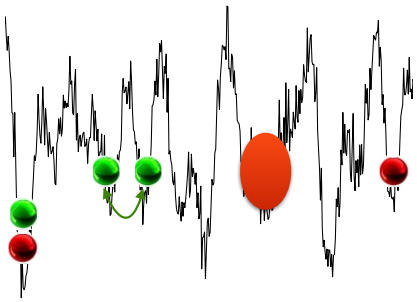
Friends of the Kavli Institute for Theoretical Physics

Chalk Talk

Getting Stuck:





Shaking Up Statistical Physics

In 1958, P.W. Anderson made an unexpected discovery: adding disorder to a solid could cause the electrons to localize, i.e. get stuck. This theoretical result came from quantum effects and it shook the foundations of statistical mechanics. If the electrons can't move, they cannot decohere and tend to thermal equilibrium, undermining one of the central pillars of the statistical approach to physics. The recent excitement stems from two breakthroughs: the direct experimental observation of localization in ultra-cold atomic gases, and the theory of the role of interactions. In this talk, I will provide an intuitive picture of localization and then move to the current frontiers of our understanding of how getting stuck relates to tantalizing prospects like quantum computation.

Wednesday, October 14, 2015
Kohn Hall, UCSB
5:30 Courtyard Reception
6:15 - 7:15 Presentation and Discussion

Attendance by Reservation Only

RSVP by Monday, October 12: *On-Line:* www.kitp.ucsb.edu/chalk-talk-rsvp
Phone: (805) 893-6363 *or* events@kitp.ucsb.edu

Lot 10 parking
As you enter campus from Hwy 217, turn right onto Mesa Rd, merge into the left lane, and at the stop light turn left into Parking Structure 10. Park, buy a permit from the dispenser (near the elevator and stairs), and display the permit on your dashboard. The KITP is right next door to the parking structure.

Anushya Chandran
Post-Doctoral Fellow
Perimeter Institute for Theoretical Physics

Anushya Chandran earned her Ph.D. in Physics at Princeton University in 2013. Her interests are in correlated phases of matter, far-from-equilibrium quantum dynamics and disordered systems. She grew up on the hot and humid coast of Southern India, dancing and doing math for as long as she can remember. She tried her hand at electrical engineering, but could never seem to wire anything right. Today she studies emergent phenomena in many-body quantum systems and probes the role of entanglement in them.