

Chez Pierre

Presents ...

Monday, February 23, 2026

10:00 am - 11:00 am

Duboc room – 4-331



Special Chez Pierre Seminar

Ethan Lake, UC Berkeley

“Many-body memories”

Are there many-body systems capable of retaining long-term memory of their initial conditions, even when coupled to a noisy environment? This question is central to a wide range of problems in nonequilibrium dynamics, condensed matter physics, and applied quantum science, and we are only just beginning to answer it.

In this talk, I will overview recent progress in this direction, for both classical and quantum information. On the classical side, I will describe spin systems that encode information in a self-organising, noise-robust way. Studying these systems has led to new discoveries in nonequilibrium statistical physics, and has demonstrated that achieving order in the absence of any symmetry may be easier than previously thought. On the quantum side, I will present many-body systems whose native dynamics autonomously protects quantum information against decoherence. These systems have the potential to significantly streamline experimental quantum error correction efforts, and define a new direction in the classification of nonequilibrium phases of quantum matter.