Physics AT QUEENS COLLEGE

Colloquium Notice

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Probing and controlling many-body systems via their non-equilibrium dynamics

How to probe the collective excitations and control the properties of quantum materials via non-equilibrium processes is one of the central open questions in quantum science. In this two-part talk, I will attempt to shed some light on this question by considering two systems of interest. I will first show how in the spin liquid phase of toric code ladders dynamical correlators can be used to detect the presence of semionic excitations. Then, in the second portion of my talk, I will demonstrate how charge and spin currents can be induced and controlled via nonreciprocal dissipative processes in two-dimensional spinful fermionic systems with broken inversion and time-reversal symmetries. With these two examples, I hope to provide some insights into the extremely rich physics of correlated systems away from equilibrium.

Monday
July 13, 2026
Starts at 12:15 PM
Coffee at 12:00 PM
Physics Conference Room, SB B326
This talk is accessible via **Zoom** or use
meeting ID 829 2687 2594 and **passcode 866995** to join