ID de Contribution: **10** Type: **Non spécifié**

Topological transition in a continuously monitored free fermion model

mardi 20 juin 2023 11:25 (20 minutes)

Local quantum measurements of many-body systems can induce phase transitions between volume and area law scaling of entanglement entropy.
Here we present a Gaussian fermionic model where continuous measurements of two non-commuting sets of observables induce a transition between area-law entanglement scaling phases of distinct topological order. We characterize the phase transition in terms of the topological entanglement entropy.
We find numerically that the area-to-area law phase transition differs from its projective measurement counterpart and that the topologically distinct phases are separated by a sub-volume scaling phase when unitary dynamics are introduced. We further introduce a partial post-selection that continuously connects the phase diagram to that of a non-Hermitian model whose phases are characterized by distinct topological numbers.

Orateur: ROMITO, Alessandro (Lancaster University)

Classification de Session: Quantum Trajectories and Measurement Induced Phase Transitions