

Exploring Non-Hermitian Phenomena in Ultracold Fermions

Tuesday 1 October 2024 11:00 (1 hour)

Ultracold fermions, traditionally prepared in well-isolated environments with minimal dissipation, have recently emerged as a novel platform for investigating non-Hermitian physics and broader open quantum systems. This exploration is facilitated through precise control of dissipation mechanisms. In this presentation, I will elucidate the methods for realizing such non-Hermitian systems using atomic ensembles, and discuss our recent experimental observations. These include the demonstration of the non-Hermitian skin effect in two dimensions and chiral spin transfer near exceptional points. Furthermore, I will outline our ongoing research into novel quantum dynamics that extend beyond conventional non-Hermitian frameworks within these open quantum systems.

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