

Theory Colloquium

Victor Gurarie, University of Colorado Boulder, USA

“Local observables and Loschmidt echo of quenched paired fermionic superfluids”

Abstract

We describe time evolution of quenched paired fermionic s -wave and p -wave superfluids. After reviewing some of the more established results concerning the steady states they reach after the quench, we discuss their Loschmidt echo. We demonstrate that conventional mean field theory calculates classical echo instead of its quantum counterpart, and show how it should be modified to capture the full quantum Loschmidt echo. We use these results to show that the Loschmidt echo of topological p -wave superconductors feature singularities periodically occurring in time, while the Loschmidt echo of non topological s -wave superconductors is free of singularities.

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SR 1 | ICT building