

MCMQ PhD Lecture: Tom Wessel

Wednesday, 20 May 2026 11:30 (1 hour)

Title: Response theory for gapped many-body quantum lattice systems

Abstract: This talk provides an introduction to adiabatic and response theory for quantum lattice systems. After a brief motivation and discussion of response theory, we introduce the algebraic description of fermionic lattice systems and discuss the challenges in rigorously justifying response theory. We then outline the construction of non-equilibrium almost stationary states and how they are used to justify response theory and Kubo's formula. While a complete proof would exceed the available time, we highlight some of the technical tools, in particular the quasi-local inverse Liouvillian and Lieb-Robinson bounds. We conclude with a brief overview of recent advances in the field, including extensions to infinite volume systems, systems with a gap in the bulk, and locally gapped systems.

zoom link: <https://uniroma1.zoom.us/j/82533447845?pwd=TGxIDMGoKwkPNMg8xv90axIvnQDvc1.1>