ID de Contribution: **14**   Type: **Non spécifié**

Fermion Monte Carlo: DQCP and defects

jeudi 5 juin 2025 11:00 (1 heure)

We provide an overview of fermion models of deconfined quantum critical points (DQCPs) that can be simulated with fermion Monte Carlo methods. The growing evidence that DQCPs are weakly first-order transitions implies the existence of a tuning parameter that can render them strongly first-order. We provide an explicit realization of this phenomenon in the context of the Su-Schrieffer-Heeger model. The DQCP is a realization of an emergent anomaly, which implies the existence of fermionic edge states on open manifolds. Using a realization of the DQCP between a quantum spin Hall insulator and an s-wave superconductor, we provide numerical evidence for this confirming this picture. Finally, we touch on defects realized by spin chains in metals and semimetals, as well as on the simulation of continuum field theories.

Orateur: ASSAAD, Fakher (University of Würzburg)