



Contribution ID: 334

Type: Talk

Low-Lying Spectrum of Two-Dimensional Adjoint QCD from the Lattice

Tuesday, 30 July 2024 14:45 (20 minutes)

Two-dimensional adjoint QCD is the theory of a single Majorana fermion coupled to an $SU(N)$ gauge field in the adjoint representation in $(1+1)$ spacetime dimensions. The theory has been studied as a toy model of confinement in gauge theories: it confines test charges when the adjoint fermion is massive but deconfines when the adjoint fermion is massless. We present a preliminary calculation of the low-lying spectrum of two-dimensional adjoint QCD for $N = 2$ colors using a Wilson discretization of the fermion action. The Wilson term radiatively generates a four-fermion coupling that is not present in the standard adjoint QCD action, which flows to zero in the continuum. The presence of this term and its implications for future lattice Monte Carlo simulations of adjoint QCD are discussed.

Primary authors: Dr KIM, Manki (Massachusetts Institute of Technology); Dr WARRINGTON, Neill (Massachusetts Institute of Technology); OARE, Patrick (Massachusetts Institute of Technology); SHANAHAN, Phiala (Massachusetts Institute of Technology); JAY, William (MIT)

Presenter: OARE, Patrick (Massachusetts Institute of Technology)

Session Classification: Applications outside particle physics

Track Classification: Applications Outside Particle Physics