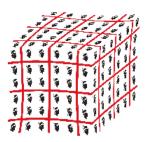Contribution ID: **103**   Type: **not specified**

Exact results for two-color QCD at low and high density

Thursday, 17 June 2010 15:30 (20 minutes)

We consider the chiral extension of the real Ginibre ensemble of random matrices with dynamical flavors to study the spectrum of the Dirac operator in two-color QCD with nonzero baryon chemical potential. We show that at maximum non-Hermiticity the random-matrix model is equivalent to the low-energy effective theory at high density in the epsilon regime. We obtain the microscopic spectral density of the Dirac eigenvalues in the limits of both strong and weak non-Hermiticity for a general number of flavors. We illustrate the main characteristics of the spectrum and comment on the sign problem for non-degenerate quark masses. Our results can in principle be checked by lattice QCD simulations.

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talk

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Session Classification: Parallel 39: Nonzero temperature and density

Track Classification: Nonzero temperature and density