



Contribution ID: 197

Type: **not specified**

Orientifold Planar Equivalence: The Quenched Meson Spectrum

Friday, 18 June 2010 17:20 (20 minutes)

Orientifold Planar Equivalence is a powerful analytical tool that allows us to relate certain observables (among which, meson masses) in $SU(N)$ gauge theory with one (anti-)symmetric Dirac flavour and $cal N = 1$ $SU(N)$ SUSY in the limit in which the number of colours N goes to infinity. This enables us in principle to transcribe SUSY results to QCD, provided that the latter is close (in the sense of an appropriate $1/N$ expansion) to its large- N limit. We present a lattice study of the meson and rho mass in the quenched theory for N ranging from 3 to 8, fermions in two-index irreducible representations and fixed lattice spacing.

A comparison of the spectra among the various theories allows us to estimate the size of the expected corrections at finite N . Consequences of our findings for the application of Orientifold Planar Equivalence to study real-world QCD are discussed.

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talk

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Session Classification: Parallel 56: Applications beyond QCD

Track Classification: Applications beyond QCD