

Theory Seminar

Wednesday, November 4, 2009 2:10 PM 831 Pupin Hall

Conformal vs confining scenario in $SU(2)$ with adjoint fermions

Technicolor is a mechanism for electroweak symmetry breaking, alternative to the Higgs field. A gauge theory (technicolor sector) is coupled to the electroweak sector, and electroweak symmetry breaking is induced by techni-chiral symmetry breaking. While a rescaled version of QCD was excluded as technicolor model several years ago, theoretical developments in the last years have shown that gauge theories close to the conformal window are possible good candidates. $SU(2)$ with two Dirac fermions in the adjoint representation is one of these candidates. Understanding whether this theory is confining or IR-conformal is a challenging problem, which can be addressed by means of numerical simulations. I will present the most recent spectrum measurements, both in the mesonic and gluonic sectors close to the chiral limit. I will discuss some hints of conformal physics, and how the systematic errors still prevent us from drawing any solid conclusion.

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