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Ginsparg-Wilson formulation of 2D N=(2,2) SQCD with exact supersymmetry

Friday, 28 November 2008 10:30 (1 hour)

In this talk, I will discuss on lattice formulations of 2D N=(2,2) SQCD preservng one of the supercharges.
In particular, the overlap Dirac operator, which satisfies the Ginsparg-Wilson relation, is introduced to the matter sector of the theory.
It realizes the exact chiral flavor symmetry on the lattice, to make possible to define the lattice action for general number of the flavors of fundamental and anti-fundamental matter multiplets and for general twisted masses.
Furthermore, superpotential terms can be introduced with exact holomorphic or anti-holomorphic structure on the lattice.
I will also discuss the lattice formulation of matter multiplets charged only under the central U(1) (the overall U(1)) of the gauge group G=U(N), and then construct lattice models for gauged linear sigma models with exactly preserving one supercharge and their chiral flavor symmetry.

Presenter: Dr SUGINO