

Theory Seminar

Monday, November 8, 2010 2:10 PM 831 Pupin Hall

N=4 Super Yang-Mills on the Lattice

I will describe a new lattice formulation of N=4 SYM which has the merit of preserving one exact supersymmetry for non-zero lattice spacing. This exact supersymmetry ensures that the effective action of the lattice theory vanishes to all orders in the coupling constant and that the only counter terms needed in the lattice theory correspond to renormalizations of the existing terms in the lattice action. We evaluate these renormalization effects at 1-loop. The theory can be studied at strong coupling using the same Monte Carlo techniques used in lattice QCD. Applications to exploring gauge-gravity duality are described.



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