

Double Hairpin Diagrams and the Planar Equivalence of N=1 Supersymmetric Yang-Mills Theory and 1-Flavor QCD

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Abstract: Recent work by Veneziano, Armoni and Shifman suggests a large-N equivalence between N=1 Supersymmetric Yang-Mills Theory and 1-flavor QCD. One consequence of this "orientifold projection" is that scalar and pseudoscalar mesons in 1-flavor QCD should have degenerate mass since they originate from a pair of scalar fields that lie within the same Wess-Zumino supermultiplet. We investigate the mass shifts caused by "double-hairpin" annihilation diagrams in quenched QCD and in related CP(N-1) models to look for signs of this proposed degeneracy.