Abstract Submitted
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A Potential for Soft-Wall AdS/QCD SEAN BARTZ, JOSEPH KA-
PUSTA, University of Minnesota — The Anti-de Sitter Space/Conformal Field The-
ory (AdS/CFT) correspondence may offer new and useful insights into the non-
perturbative regime of strongly coupled gauge theories such as Quantum Chromo-
dynamics. Soft-wall AdS/QCD models reproduce the linear Regge trajectories of
meson spectra by including background dilaton and chiral condensate fields. Ef-
forts to derive these background fields from a gravitational potential have so far
failed to correctly incorporate chiral symmetry breaking. We present a three-field
scalar potential that includes the dilaton field and the chiral and glueball conden-
sates. This potential is shown to satisfy both the UV boundary conditions on the
background fields set by the AdS/CFT correspondence and the correct behavior in
the IR limit to obtain spontaneous chiral symmetry breaking. We present the mass
spectra produced by this model for the radially excited states of spin-0 and spin-1
mesons.

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