

Scattering of glueballs with $J=0,2$

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The scalar and the tensor glueballs ($J^{PC} = 0^{++}$ and 2^{++}) are, according to lattice results, the two lightest particles in the Yang-Mills sector of QCD. We study the scattering of two scalar and two tensor glueballs starting from the well known dilaton potential, that depends on a single dimensionful parameter, denoted as Λ_G . Upon a proper choice of the unitarization scheme, we find that, from the scattering of two scalar glueballs, a bound state, called glueballonium, can form if Λ_G is small enough (namely, the smaller Λ_G , the larger the attraction). Additionally, we use these scattering results to estimate the correction of the interactions to the pressure of a glueball gas, that describes the YM thermodynamics in the confined phase.

Collaboration

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