STRONG2020 (Second Strong2020 online Workshop)



ID contributo: 113

Tipo: Poster

Glueball-glueball scattering and the glueballonium

mercoledì 15 settembre 2021 13:35 (5 minuti)

The scalar glueball G is the lightest particle of the Yang-Mills sector of QCD, with a lattice predicted mass of about mG⊠1.7 GeV. It is natural to investigate glueball-glueball scattering and studying the possible emergence of a bound state, that we call glueballonium. We perform this study in the context of a widely used dilaton potential, that depends on a single parameter AG. We consider a unitarization prescription that allows us to predict the lowest partial waves in the elastic window. These quantities can be in principle calculated on the lattice, thus offering possibility for testing the validity of the dilaton potential and an independent determination of its parameter. Moreover, we also show that a stable glueballonium exists if AG is small enough. In particular, for AG compatible with the expectations from the gluon condensate, the glueballonium has a mass of about 3.4 GeV.

Relatore: TROTTI, Enrico (UJK, Kielce) Classifica Sessioni: Poster Session