

Is $f_2(1950)$ the tensor glueball?

Monday, June 5, 2023 5:45 PM (20 minutes)

Glueballs are still an experimentally undiscovered expectation of QCD. Various theoretical approaches (most famously Lattice QCD) predict a spectrum of glueballs. The tensor ($J^{PC} = 2^{++}$) glueball is the second lightest, behind the scalar glueball.

Here, using a chiral hadronic model, we compute decay ratios of the tensor glueball into various meson decay channels. We find the tensor glueball to primarily decay into two vector mesons, mainly $\rho\rho$ and K^*K^* channels. We compare these results to experimental data of decay rates of isoscalar tensor mesons. We make statements on the eligibility of these mesons as potential tensor glueball candidates: the resonance $f_2(1950)$ turns out to be, at present, the best match as being predominantly a tensor glueball.

Authors: VEREIJKEN, Arthur (UJK kielce); GIACOSA, Francesco (Institut für Theoretische Physik, Johann Wolfgang Goethe-Universität, Frankfurt); Dr PIOTROWSKA, Milena (Jan Kochanowski University); JAFARZADE, Shahriyar

Presenter: VEREIJKEN, Arthur (UJK kielce)

Session Classification: Exotic hadrons and candidates

Track Classification: Exotic hadrons and candidates