



Contribution ID: 297

Type: **Poster Presentation**

Study of $I = 0$ bottomonium bound states and resonances based on lattice QCD static potentials

Tuesday, August 9, 2022 7:00 PM (1 hour)

We investigate $I = 0$ bottomonium bound states and resonances in S, P, D and F waves using lattice QCD static-static-light-light potentials. We consider five coupled channels, one confined quarkonium and four open $B^{(*)}\bar{B}^{(*)}$ and $B_s^{(*)}\bar{B}_s^{(*)}$ meson-meson channels and use the Born-Oppenheimer approximation and the emergent wave method to compute poles of the \mathbb{T} matrix. We discuss results for masses and decay widths and compare them to existing experimental results. Moreover, we determine the quarkonium and meson-meson composition of these states to clarify, whether they are ordinary quarkonium or should rather be interpreted as tetraquarks.

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Session Classification: Poster

Track Classification: Hadron Spectroscopy and Interactions