2019 CAP Congress / Congrès de l'ACP 2019



Contribution ID: 2388

Type: Oral (Non-Student) / Orale (non-étudiant(e))

Probing the Strangeonium Hybrid Content of the Y(2175) Using Gaussian Sum-Rules

Wednesday 5 June 2019 12:00 (15 minutes)

The Y(2175) resonance was first observed in an initial state radiation process by the BaBar Collaboration. It was later confirmed by the BES, Belle, and BESIII collaborations. A conventional strangeonium meson interpretation of the Y(2175) is disfavoured due to the resonance's relatively narrow width and unexpected decay patterns. As such, it may be an outside-the-quark-model hadron, e.g., a hybrid, tetraquark, and/or meson molecule. We use Gaussian sum-rules—a variant of QCD sum-rules well-suited to studying multi-resonance models—to investigate possible strangeonium hybrid content of the Y(2175).

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Session Classification: W1-4 Advances in Nuclear and Particle Theory (DTP/PPD/DNP) | Progrès en

théorie nucléaire et théorie des particules (DPT/PPD/DPN)

Track Classification: Theoretical Physics / Physique théorique (DTP-DPT)