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Masses of Light Quarkonium 0⁺⁻ Hybrids from Gaussian Sum-Rules

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We compute masses of light quarkonium and strangeonium 0^{+-} hybrids using Gaussian sum-rules. Correlation functions account for condensates up to dimension-six and are calculated at leading-order in α_s . Our analysis indicates that the resonance signal strength in this channel is distributed over a wide range, inconsistent with a single narrow resonance. A single wide resonance is also disfavoured as the resonance width would have to be extremely large. Using a double narrow resonance model, we find excellent agreement between QCD and hadron phenomenology, and extract mass predictions of 2.6 GeV and 3.6 GeV.

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