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Predictions for production and decay of the pseudoscalar glueball from the Witten-Sakai-Sugimoto model

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The top-down holographic Witten-Sakai-Sugimoto model for low-energy QCD, augmented by finite quark masses, has recently been found to be able to reproduce the decay pattern of the scalar glueball candidate $f_0(1710)$ on a quantitative level. We show that this model predicts a narrow pseudoscalar glueball heavier than the scalar glueball and with a very restricted decay pattern involving η or η' mesons. Production should be either in pairs or in association with $\eta(\prime)$ mesons. We discuss the prospect of discovery in high-energy hadron collider experiments through central exclusive production by comparing with η' pair production.

Experimental Collaboration

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