

Search for Exotic Hadrons in $\eta(\prime)\pi$ at GlueX

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The theoretical description of the strong interaction between quarks and gluons that form hadrons is provided by Quantum Chromodynamics. However, the impact of gluonic excitations on the characteristics of hadrons and their role in hadronic structure is yet to be determined.

Recent discoveries of several possibly exotic hadrons highlight the significance of precise spectroscopic measurements in comprehending the nature of the strong interaction. This presentation focuses on the status of the hunt for exotic contributions in photoproduction data obtained with the GlueX experiment at Jefferson Lab in $\eta(\prime)\pi$ systems.

Specifically, I will discuss the investigation of the $a_2(1320)$ meson production in these key channels, which is an initial step towards identifying exotic quantum-number hybrid mesons. Furthermore, the discussion will cover the application of an amplitude analysis that exploits the polarization of the photon beam available to the GlueX experiment and its implications for identifying the lightest hybrid meson.

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