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Recent results from GlueX

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The detailed understanding of the hadron spectrum is currently one of the biggest open issues in the field of hadron physics. Most of the observed states are classified as quark-antiquark mesons or three-quark baryons. However, quantum chromodynamics (QCD) allows for a much richer spectrum with more complex, non-conventional configurations, such as multi-quark states, hybrid mesons and glueballs. Hybrid mesons, which manifest gluonic degrees of freedom, serve as an ideal testing ground for the non-perturbative regime of QCD and understanding the role of gluons in hadron formation.

The main goal of the GlueX experiment is to search for exotic hybrid mesons and to map out their spectrum in the light-quark sector. The experiment is located in Hall D at Jefferson Lab, USA, and uses a linearly polarized photon beam with energies of up to 12 GeV incident on a liquid hydrogen target and consists of a high-acceptance spectrometer with excellent charged as well as neutral particle detection capabilities. This allows us to study the production mechanisms and decays of a wide range of hadronic resonances.

This talk gives an overview of the recent results from GlueX.

Collaboration

GlueX

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