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The GlueX Experiment: A Search for Exotic Matter

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A long-standing goal of hadron physics has been to understand how the quark and gluon degrees of freedom that are present in the fundamental QCD Lagrangian manifest themselves in the spectrum of hadrons. The GlueX Experiment's place in the global spectroscopy program is complementary to efforts at other facilities: using 8-9 GeV linearly polarized photons at Jefferson Lab, GlueX is focusing on the exploration of the light-quark domain, potentially accessing hybrid mesons with exotic JPC quantum numbers produced in photon-proton reactions. The experiment has recently finished its first phase of running having collected 280 billion triggers, with 20% of the data in active analyses. The key features and results of this compelling physics program will be presented with emphasis on the beam asymmetry ratio between the eta-prime and eta mesons as it is sensitive to the exchange processes in the resonance production mechanism.

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