

Abstract Submitted
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The GlueX Experiment at Jefferson Lab SEEMA DHAMIJA, Research Associate, Florida International University, Miami, FL 33199 USA, GLUEX COLLABORATION — One of the main scientific questions that remains unanswered in subatomic physics is the nature and behaviour of the “glue” which holds the quarks together. The puzzling feature of this quark-gluon interaction is that quarks are never found free, a phenomenon known as confinement. Since gluons carry colour charge, they cause the formation of chromoelectric flux tubes, which may yield unusual objects such as glueballs or hybrids. In certain models the latter can be produced with quantum numbers not allowed in the simple quark model providing a powerful signature for hybrid meson spectroscopy. The GlueX experiment will provide for the detailed spectroscopy necessary to map out the hybrid meson spectrum, which is essential for an understanding of the confinement mechanism and the nature of the gluon in QCD. It will be housed in the new experimental hall (Hall D) which will be constructed as part of the 12 GeV upgrade. The physics motivating the search and the status of the experiment will be reviewed.

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