

Title

Searches for Hybrid Mesons at GlueX

Abstract

The GlueX experiment at Jefferson Lab is designed to search for and study the spectrum of hybrid mesons, which are predicted to have excitations of their gluonic field. A 12 GeV electron beam incident on a diamond radiator will be used to produce a linearly-polarized, coherent bremsstrahlung tagged photon beam with a coherent peak at 9 GeV. The linearly-polarized photon beam will be incident on a proton target located within the hermetic GlueX detector. The baseline design for the detector contains a start counter surrounding the target, a solenoidal magnet, a cylindrical central drift chamber, forward drift chamber planes, barrel and forward calorimeters, and a forward time-of-flight scintillator wall. In addition, a proposal has been submitted for adding a Cherenkov detector to facilitate identification of charged kaons. Full experimental running is scheduled to begin in 2015. Simulated signal extraction results for several different physics channels will be shown.