

Abstract Submitted
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Survey of Meson Spectroscopy in the 4γ Channel¹ SHUANG HAN,
Wuhan University, GLUEX COLLABORATION — The large acceptance of the
GlueX detector provides access to mesons that decay to multiple photons. A channel
that is rich in physics potential is $\gamma+p\rightarrow p+4\gamma$. For example, the photo-production
of $\pi^0\pi^0/\pi^0\eta$ can be used to study the properties of the $f_0(980)$ and $a_0(980)$ mesons,
respectively, and help discriminate among models for scalars. In this talk, we will
present preliminary results from our 4γ survey of the Spring 2016 dataset, with
emphasis on decays to $\pi^0\eta$. In addition, we will discuss backgrounds and recon-
struction efficiency for upcoming GlueX measurements of the rare decay $\eta \rightarrow \pi^0 2\gamma$
, which will be used to search for a lepto-phobic B boson in the mass range 0.14-0.5
GeV/ c^2 via $\eta \rightarrow \gamma+B \rightarrow \gamma+[\pi^0\gamma]$.

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