## Amplitude analysis of the $\omega \pi^-$ system at GlueX

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January 2021

Signals for mesons with exotic  $J^{PC}$  quantum numbers, which are not allowed for a quark-antiquark pair, have been experimentally observed, but their exact nature is still unknown. A candidate for these exotics is the hybrid meson, which consists of a quark, an antiquark, and an excited gluonic field configuration. GlueX, a photoproduction experiment in Jefferson Lab's Hall D, aims to map the spectrum of light-quark mesons by studying a multitude of final states allowed by the detector's large acceptance.

The lightest expected exotic hybrid meson with  $J^{PC} = 1^{-+}$  has been predicted to decay predominantly to  $b_1\pi$ , in a recent calculation by the HadSpec Collaboration [1]. Thus, understanding the decay of the axial-vector  $b_1$  meson is an important step in the search for exotics. In this talk, studies of the reaction  $\gamma p \to \Delta^{++} \omega \pi^{-}$  at GlueX will be presented, with an emphasis on the amplitude analysis of the  $\omega \pi^{-}$  final state, which is the dominant decay mode of the  $b_1^{-}$ .

## References

 Antoni J. Woss et al. "Decays of an exotic 1<sup>-+</sup> hybrid meson resonance in QCD". In: (Sept. 2020). arXiv: 2009.10034 [hep-lat].