

Abstract Submitted  
for the APR21 Meeting of  
The American Physical Society

**The Decay of the  $b_1(1235)$ -Neutral Meson Through the  $\omega\pi^0$  Channel at GlueX**<sup>1</sup> KARTHIK SURESH, ZISIS PAPANDREOU, AHMED MARWAN FODA, Univ of Regina, GLUEX COLLABORATION — 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 at Jefferson lab contributes to the global spectroscopy program using 8-9 GeV linearly polarized photons. This experiment focuses on the exploration of the light-quark domain, potentially accessing hybrid mesons with exotic  $J^{PC}$  quantum numbers in photoproduction reactions.

The decay of several exotic mesons (e.g.  $\pi_1(1600)$ , etc.) to  $b_1\pi$  can be accessed through the dominant decay  $b_1 \rightarrow \omega\pi$ . In this talk we discuss the channel  $\gamma p \rightarrow p b_1 \pi^0$ , where the axial-vector meson  $b_1(1235)$ -neutral decays to  $\omega\pi^0$ . Understanding this channel is important, particularly in the context of Partial Wave Analysis and being able to extract the D/S wave ratio, which is of interest to validate predicted couplings to this axial-vector resonance from Lattice QCD calculations.

<sup>1</sup>The work is supported by the Natural Sciences and Engineering Research Council of Canada Grant No. SAPPJ-2018-00021

Karthik Suresh  
Univ of Regina

Date submitted: 11 Jan 2021

Electronic form version 1.4