Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Probing for high momentum protons in 4He[1] ALYSSA GADSBY, FATIHA BENMOKHTAR, Duquesne University, FATIHA BENMOKHTAR TEAM, KONRAD ANIOL TEAM — Helium-4 is the lightest nucleus that has the characteristics of heavier nuclei and also allows us to study the proton momentum distributions . The E08009 experiment in hall A at Jefferson lab aims to study proton momentum distributions inside this nucleus. This is possible through the extraction of the cross section and the study of the missing energy spectrum versus missing momentum of the 4He(e,e'p)X reaction. My work was on data analysis and the extraction of the missing energy spectra after background subtraction. The cleaning of the spectra was done by the study the Physics acceptance that takes into account the geometrical phase-pace and target length reconstruction as well as spectrometer momentum resolution. In addition, coincidence events were validated by selecting a time window of 20 ns for the difference of the arrival time of electrons and protons. Cross section results were then compared to relativistic calculations and showed that some of the strength in the cross section is not accounted for. Replace this text with your abstract body.

[1]NSF grant 1615067

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Date submitted: 12 Jan 2020 Electronic form version 1.4