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Studies of the continuum region in the ^{4}He(e,e'p)X reaction[1]
AIDEN BOYER, FATIHA BENMOKHTAR, Duquesne University — Helium-4 is the lightest nucleus that has the characteristics of heavier nuclei. The E08009 experiment in hall A at Jefferson lab aims to study the behavior of the proton inside this nucleus. This is possible through the study of the ^{4}He(e,e'p)X reaction. My work was on data analysis and the extraction of the missing energy spectra up to the pion threshold. 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 for the 2 body breakup channel have been extracted and I am extending the method to the continuum channel. From this study, we will learn how the knocked out proton interacted inside the nucleus with its counterparts protons and neutrons.

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