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μ RWELL detector developments at Jefferson Lab for high luminosity experiments

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One of the future plans at Jefferson Lab is running electron scattering experiments with large acceptance detectors at luminosities of $10^{37} \text{ cm}^{-2}\text{s}^{-1}$. These experiments allow the measurements of the Double Deeply Virtual Compton Scattering (DDVCS) reaction, an important physics process in the formalism of Generalized Parton Distributions, which has never been measured because of its low rate. The luminosity upgrade of CLAS12 or the SOLID detector makes Jefferson Lab a unique place to measure DDVCS. One of the important components of this upgrade is a tracking detector that can withstand high rates of $\approx 1 \text{ MHz/cm}^2$. The recently developed Micro-resistive well (μ RWELL) detectors are a promising option for such a tracking detector by combining good position resolutions, low material budget with simple mechanical construction and low production costs. In my talk, I will show the recent developments and studies with μ RWELL detectors at Jefferson Lab for future upgrades of the CLAS12 detector to study the DDVCS reaction.

session

A. Facilities and Detectors

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