

Performances of the cylindrical Micromegas Vertex Tracker at the CLAS12 experiment for the 2017-2019 physics run.

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At Jefferson Lab, the new CLAS12 spectrometer has been collected its first physics data with a 10.6GeV electron beam at a luminosity of $10^{35} \text{ cm}^{-2} \text{ s}^{-1}$. The Central Vertex Tracker (CVT) is situated within a 5T-solenoidal field surrounding a proton target. It consists of a tracker based on Micromegas and silicon detectors used in combination, in order to optimize spatial resolution and low material budget for the tracking of low momentum recoil protons.

We will report on the performances of the Micromegas Vertex Tracker (MVT) and its operation during CLAS12 physics run. The MVT consists of 18 cylindrical Micromegas that operated in a 5T magnetic field and 2MHz integrated particle rate. These challenging condition makes of the MVT one of the most ambitious design in the MPGDs world. The detectors and electronics followed by the performances during physics run will be presented followed by an outlook on the possible future of Micromegas at the Electron-Ion Collider (EIC).

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