

DNP17-2017-000534

Abstract for an Invited Paper
for the DNP17 Meeting of
the American Physical Society

Novel Micromegas trackers

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The latest development in Micromegas trackers includes the Micromegas Vertex Tracker (MVT) soon to be installed in Jefferson Lab Hall B, in the CLAS12 central tracking system. The MVT is composed of 6 cylindrical layers and 6 flat disks of resistive bulk Micromegas detectors. They have been designed to withstand the high particle flux environment and the high magnetic field using a low material budget of less than 0.5% of a radiation length per detector. The MVT is read out using front-end electronics based on the “Dream” Asic developed at CEA Saclay/Irfu. The low material budget requirements and very stringent space restrictions of the central tracking system surrounded by a 5T solenoid prevent the use of on-detector frontend electronics. The ability of the Dream chip to work with high-capacitance detectors allows deploying the electronics some 2 m away using flat micro-coaxial cables. After a short introduction to Micromegas detectors and the state-of-the-art achievements in this technology, I will focus on the CLAS12 MVT detector system, from the fabrication techniques to the readout electronics. Possible future developments will briefly be presented as well.