

New Developments in Micropower ASICs for 3D pixelated charge readout of liquid argon Time Projection Chambers

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True three-dimensional ionization charge detection and readout of liquid argon time projection chambers has recently been demonstrated. To achieve this, a 32-channel custom readout ASIC, LArPix, was used to read out a custom pixelated TPC anode immersed in liquid argon. This talk will discuss design and architectural details that enabled low-noise, low-power digitization of the charge signal. In addition, potential follow-on developments and improvements (e.g. increased number of channels, increased ADC dynamic range) will be discussed.

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