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【327】 ArgonCube: A Modular Approach for Liquid Argon Time Projection Chambers

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The ArgonCube Collaboration developed a novel design for Liquid Argon Time Projection Chambers (LAr TPCs), segmenting the total detector volume into a number of electrically and optically isolated TPCs sharing a common cryostat. For the charge-readout, a pixelated anode plane is employed, providing unambiguous 3D event reconstruction. To minimize inactive and dense material a new technology is used for field-shaping, replacing the classical field-cage by a continuous resistive foil. Large dielectric planes inside the field-shaping structure allow for an efficient detection of prompt scintillation light. The technology proposed by ArgonCube will be applied to the near-detector of the Deep Underground Neutrino Experiment, DUNE, and being proposed also for one of the far-detectors.

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