

An imaging detector for Liquid Argon experiments

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Large volumes of liquid Argon constitute an excellent medium for the detection of neutrino interactions. As an alternative or a complement to the established readout method based on charge collection, the scintillation light produced by Argon may allow to reconstruct charged particle tracks by means of an imaging detector. Constructing such a device presents several challenges: the performance of both photodetectors and conventional optical elements at 128nm is generally poor; a large, densely packed array of photodetectors and electronics must be operated at cryogenic temperatures; the optical system must provide deep and wide fields of vision while remaining compact in order to maximize the fiducial volume.

This contribution will present initial steps undertaken in order to reach a functional detector design, with a focus on the simulation of novel optical systems and the performance of small scale prototypes. The design of a larger system with $O(1k)$ channels will be presented.

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No, this is an entirely new submission.

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