

Event Reconstruction Techniques for a (Water-based) Liquid Scintillator Detector

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By reconstructing the arrival position and time of photons produced in water or liquid scintillator on highly segmented fast photo-detectors one can reconstruct tracks by using the 'drift time' of photons, much as one does with electrons in a Time Projection Chamber. I will present recent advances in event reconstruction techniques that are being developed in the context of a recently proposed THEIA detector with a broad physics program including neutrinoless double beta decay, solar neutrinos, geo-neutrinos, supernova neutrinos, nucleon decay, and long baseline neutrino physics.

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