

Abstract Submitted  
for the DNP15 Meeting of  
The American Physical Society

**NuDot: Search for neutrinoless double-beta decay** JESSE SANTANA, Univ of California - Los Angeles — NuDot is a prototype, liquid scintillator detector, to demonstrate that the separation of directional Cherenkov light from isotropic scintillation light is possible using sub-nanosecond photodetectors. NuDot is currently being tested on a small scale before ramping up to a one-metric ton prototype in the next three years. A proof-of-concept setup for separating the light as well as calibrating the PMTs timing has been designed. The setup consist of two LEDs, the first of which will mimic the cherenkov light while the second represents the scintillating light. NuDot's main application is the search for neutrinoless double beta decay, but it could also be used to reduce backgrounds in studies of geo-neutrinos, solar neutrinos, supernovae neutrinos and neutrino interactions. By being sensitive to the Cherenkov light a detector will have directionality for events and increase its energy resolution- these two effects can provide methods to veto backgrounds- which then allow for a better analysis of rare phenomena such as neutrinoless double beta decay.

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Date submitted: 31 Jul 2015

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