

Abstract Submitted
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Measurement of light yield dependence on electron energy for SNO+ scintillator¹ HOK SEUM WAN CHAN TSEUNG, University of Washington — SNO+ is a multi-purpose neutrino experiment whose reach extends to the following areas of neutrino physics: neutrinoless double beta decay (with Nd-loaded scintillator), geo-neutrinos, reactor and low-energy solar neutrinos, as well as supernova neutrinos. It is a ~ 780 -tonne liquid scintillator detector currently under construction at the SNOLAB facility in Sudbury, Ontario, Canada. The scintillator to be used in SNO+ is linear alkylbenzene (LAB) with ~ 2 g/L of PPO (2,5-diphenyloxazole). In this talk, we describe an experiment to test the linearity of the response of LAB-PPO with respect to electrons. We find that below ~ 0.4 MeV, the energy scale of LAB-PPO becomes non-linear. An explanation is given in terms of Cherenkov light absorption and re-emission by the scintillator.

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