

Abstract Submitted  
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**Calibration and Performance of the UConn-Yale-PTB-Weizmann-UCL-TUNL O-TPC<sup>1</sup>** ALEXANDER YOUNG, MOSHE GAI, TRISTAN KADING, MOHAMMAD AHMED, HENRY WELLER, VOLKER DANGENDORF, KAI TITTELMEIER, University of Connecticut — An Optical Readout Time Projection Chamber (O-TPC) will be used in an experiment at the HigS facility at Duke University for studying oxygen formation during stellar helium burning. The calibration of the O-TPC was carried out at the LNS at Avery Point prior to installation at TUNL in August 2007. A variety of pre-amplifiers and high voltage power supplies were tested and under stable conditions an energy resolution as good as 3.5 % was found in the charge signal. Charge and light gain curves were obtained using a Gd-148 source and a 75 mm diameter PMT placed at approximately 85 cm. These determined the optimal conditions for operating the O-TPC. Under the optimized conditions a CCD camera was used to capture images of single and double tracks of alpha particles from a Gd-148 source. The 3.18 MeV alpha particles yielded tracks containing only 40-50 photo electrons due to the small lens currently in use.

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Alexander Young

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