

Abstract Submitted
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Performance of the PbWO₄ Hybrid Electromagnetic Calorimeter at Jefferson Laboratory MARVIN PAYEN, North Carolina A&T State University, PRIMEX COLLABORATION — The goal of the PrimEx experiment at Jefferson Lab is to perform a high precision measurement of the π^0 lifetime via the Primakoff effect. The initial data-taking phase has recently been completed. A new electromagnetic hybrid calorimeter (HYCAL) consisting of 1152 lead tungstate (PbWO₄) crystals and 576 lead (Pb) glass Cherenkov modules was constructed by the collaboration to conduct the lifetime measurement with a precision of 1.5%. This novel electromagnetic calorimeter has high resolution, acceptance, and efficiency; characteristics that are required for the detection of the π^0 decay photons. The HYCAL has been tested with photon beams in the few GeV energy range. Results for the energy and position resolutions for both PbWO₄ and Pb-glass, including the transitions regions, will be presented.

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