

Abstract Submitted
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Instrumentation of PrimEx Experimental Apparatus PAWEL AMBROZEWICZ, North Carolina A&T State University, PRIMEX COLLABORATION — A state-of-the-art experimental setup was assembled in the Hall B of Jefferson Lab. A hybrid calorimeter, consisting of a multichannel lead glass detector with segmented high-resolution lead tungstate insert was coupled with a quasi-monochromatic photon beam from the Jefferson Lab Hall B tagged photon facility. Aided by a photon flux monitoring system, the pair spectrometer, this apparatus allows precise measurements of position and energy of forward going particles. This device was recently used in a precision measurement of neutral pion lifetime that was carried out at the Jefferson Lab - the PrimEx experiment. The measurement tested one of the most fundamental symmetry predictions of Quantum Chromodynamics, the axial anomaly, via the Primakoff effect, coherent π^0 production off a nuclear Coulomb field. Data collected covered a range of photon energies and angles that allowed clean separation of the Primakoff contribution from competing photoproduction processes. Similar setup would be used to investigate the Primakoff effect in photoproduction of the η meson in the 12GeV energy regime of the Jefferson Lab.

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