Abstract Submitted
for the HAW01 Meeting of
The American Physical Society

Sorting Category: 8 (Experimental)

Precision measurement of $\Gamma(\pi^o \to \gamma\gamma)$ via the Primakoff Effect[1] DAVID LAWRENCE, Univ. of Massachussetts[2], PRIMEX COLLABORATION, — The $\pi^o \to \gamma\gamma$ decay proceeds primarily through the chiral anamoly and is arguably the most definitive test of confinement scale QCD. This decay width can be measured through the π^o photoproduction cross section via the Primakoff effect ($\gamma\gamma^{(*)} \to \pi^o$). A new, high precision measurement ($\sim$1.5%) of the width $\Gamma(\pi^o \to \gamma\gamma)$ will be performed at Jefferson Lab using a new hybrid electromagnetic calorimeter (HYCAL) currently under construction. The calorimeter will contain approximately 1000 channels comprised of both lead-tungstate crystals and lead-glass detectors. Monitoring of the photon beam luminosity at the 1% level is required to achieve the overall precision goals of the experiment. A description of the experiment will be given with particular emphasis on the design of the detector as well as results from recent beam tests.

[1]Major funding provided by NSF MRI grant PHY-0079840
[2]Work supported by USDOE grant DE-FG02-88ER40415

[X] Prefer Oral Session
[ ] Prefer Poster Session

David Lawrence
davidl@jlab.org
University of Massachusetts

Date submitted: June 28, 2001 Electronic form version 1.4