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Precision Photon Flux Determination for the Jefferson Lab PrimEx Experiment

ARAM TEYMURAZYAN, University of Kentucky, PRIMEX COLLABORATION — The Hall B Jefferson Lab PrimEx Collaboration is using tagged photons to perform a 1.5% level measurement of the absolute cross section for the photoproduction of neutral pions in the Coulomb field of a nucleus. Such a high precision pushes the limits of the photon tagging technique in regards to the determination of the absolute photon flux.

The Collaboration has taken a multifaceted approach to this problem which has included measuring the absolute tagging ratios with a total absorption counter as well as relative tagging ratios with a pair spectrometer. In addition the PrimEx experimental setup, with its new state of the art hybrid calorimeter (HyCal), provides a unique opportunity to cross check the flux normalization procedure by measuring cross sections for well known electromagnetic processes. Data were collected during the Fall 2004 PrimEx run, and analysis is currently underway. Results of these investigations will be presented.

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[X] Prefer Oral Session
[ ] Prefer Poster Session

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