

# S- Photoproduction on the Neutron

## Results from CLAS

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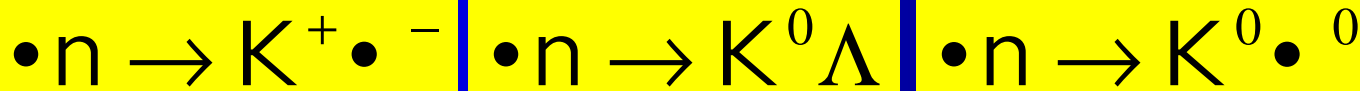
James Madison University

### Outline:

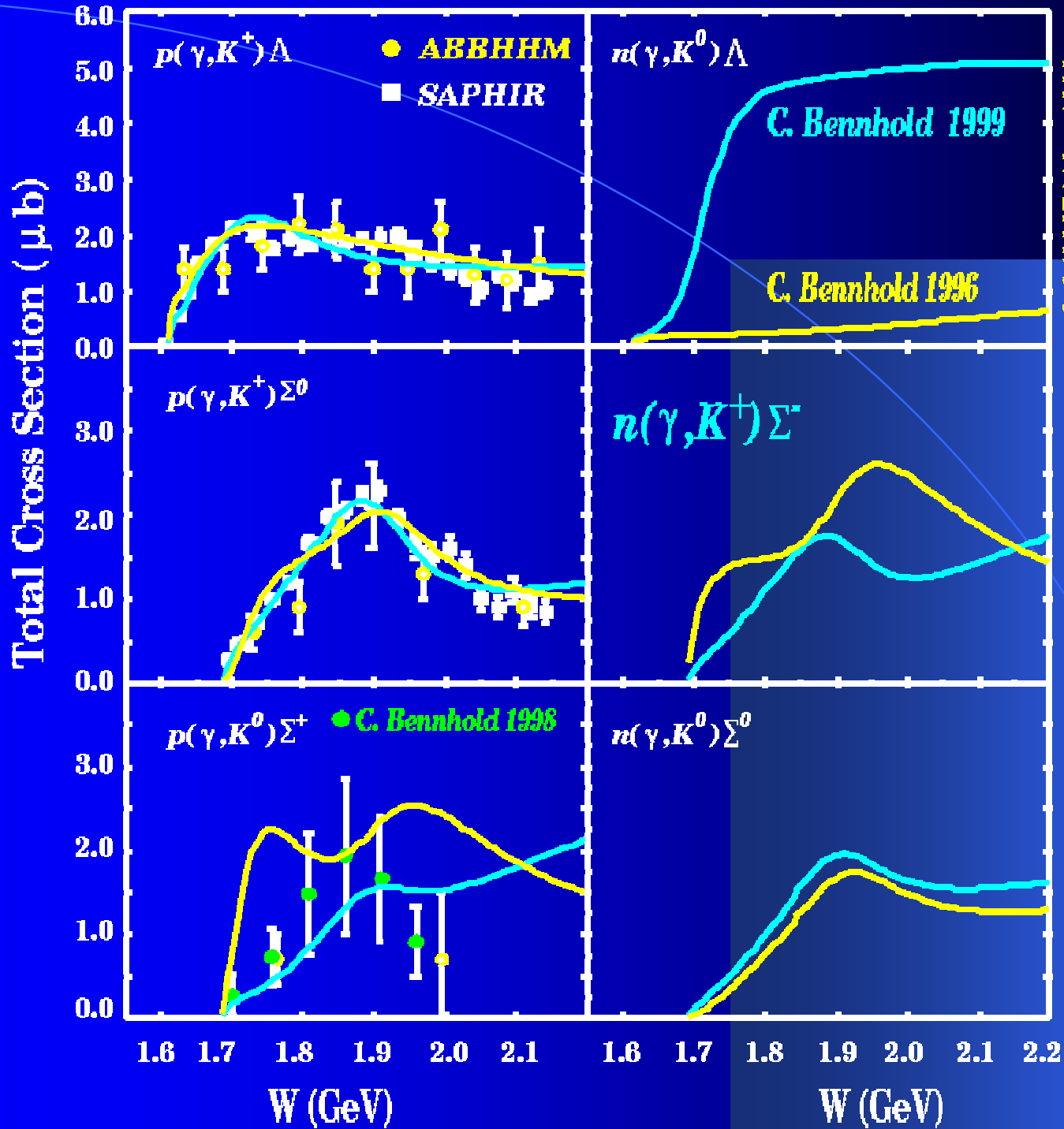
- Experiment Overview
- The reaction  $d \rightarrow K^+ n$  (p)
- Results and Future Work

# Experimental Summary for E89-045

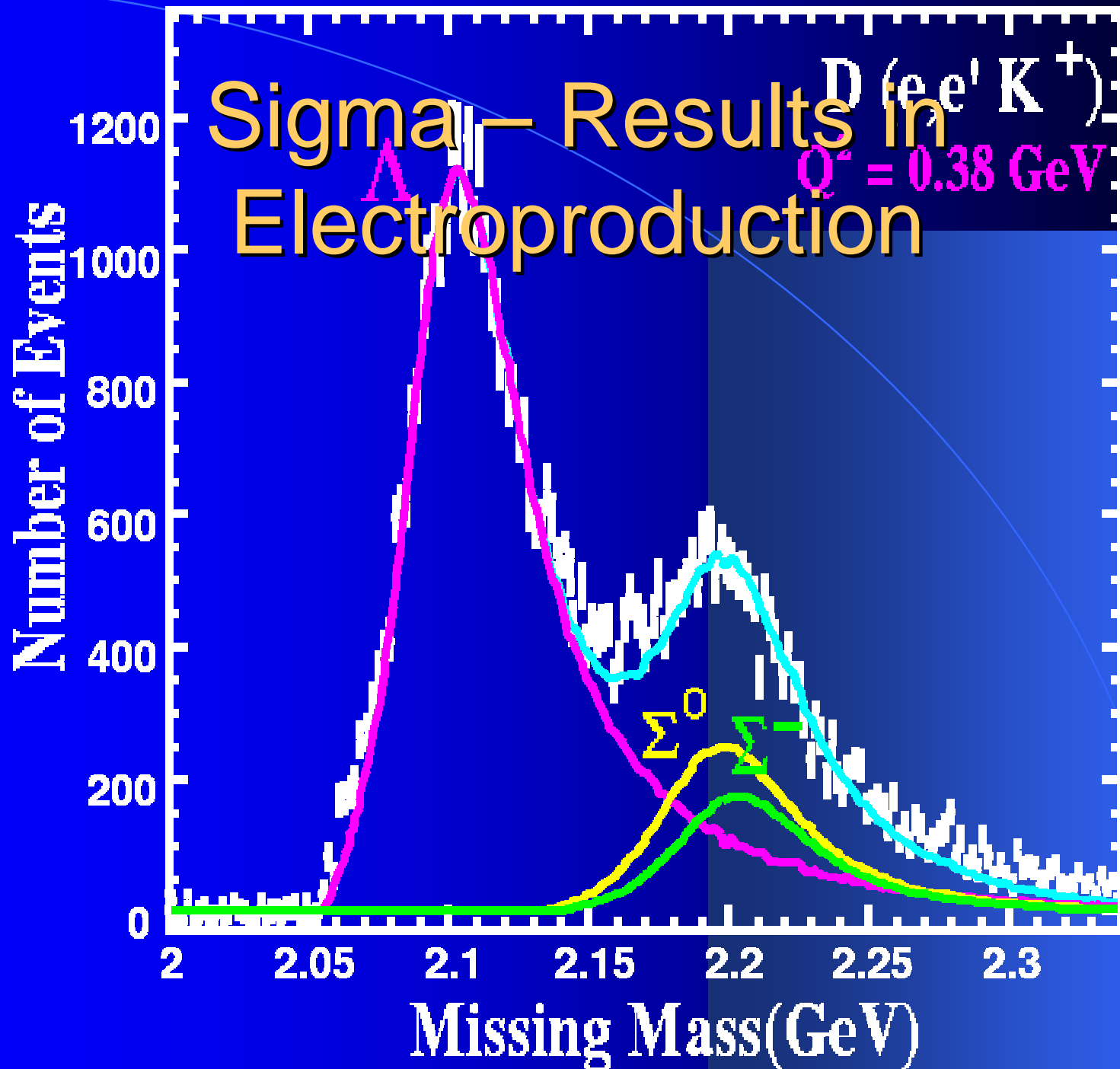
- ✚ Data obtained in Summer 1999 in Hall B at Jefferson Lab (g2)
- ✚ CLAS detector + Photon Tagger + Deuterium Target
- ✚ Acquired 2.5 billion triggers (gd)
- ✚ Study Kaon Photoproduction on deuterium:
  - Elementary processes on neutron:



- Final State Interaction



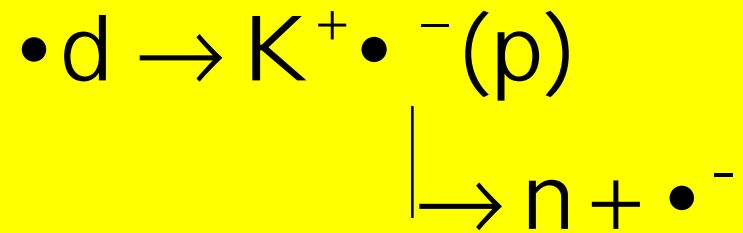
F.X. Lee, T. Mart, C. Bennhold, L.E. Wright nucl-th/9907119 1999



JLab Experiment E91-016 (D. Koltenuk, Ph.D. Thesis)

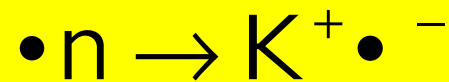
# Data Analysis

- ✚ Study exclusive reaction:

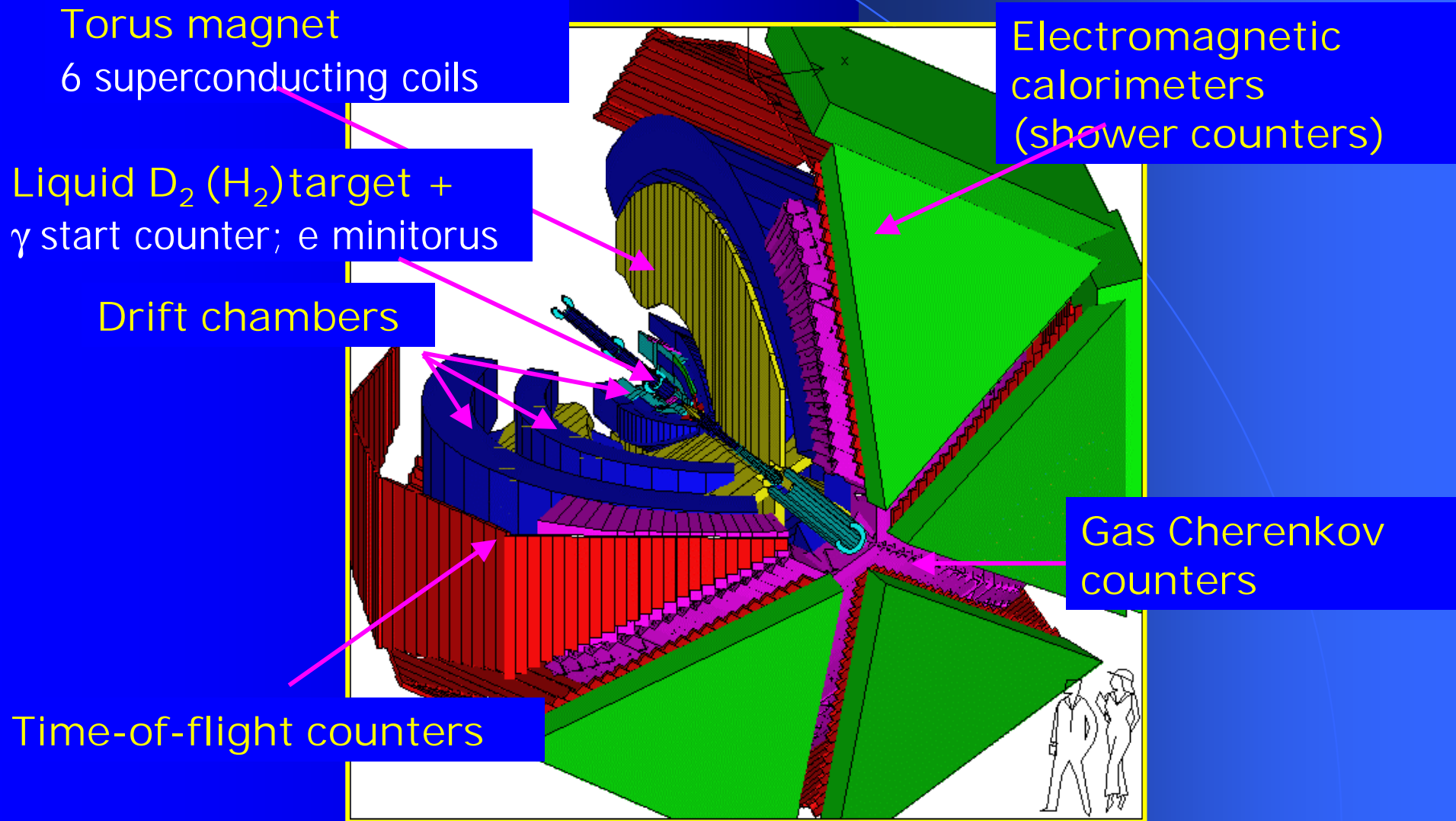


- ✚ Detect  $K^+$  and  $\Sigma^-$  decay products ( $n$  and  $p^-$ )

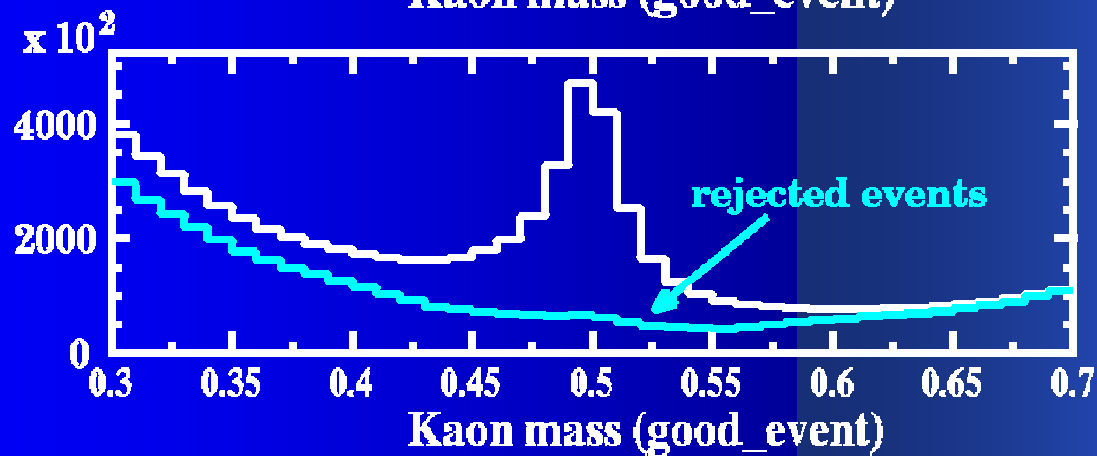
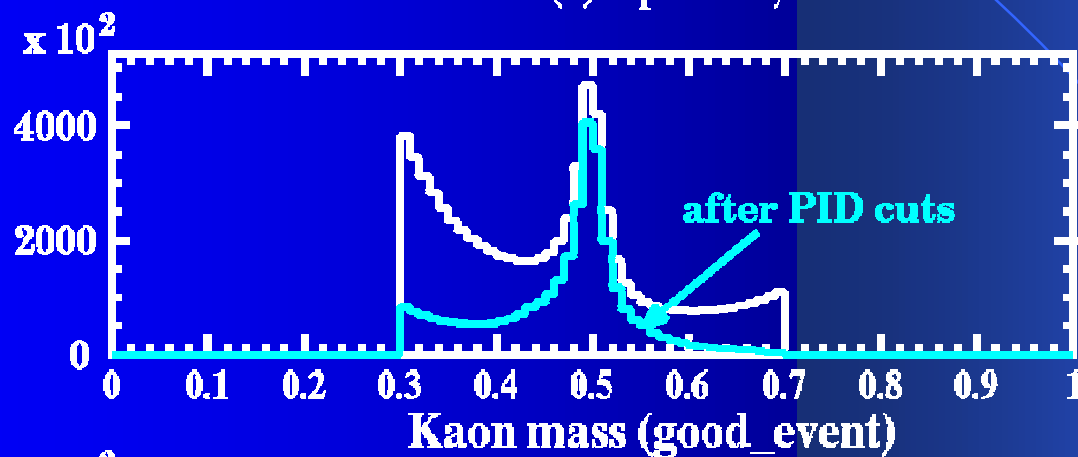
- ✚ Extract cross section for



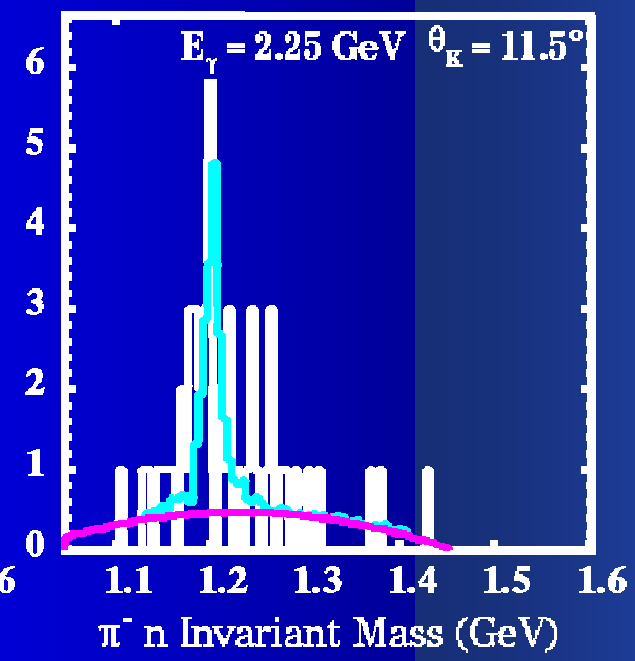
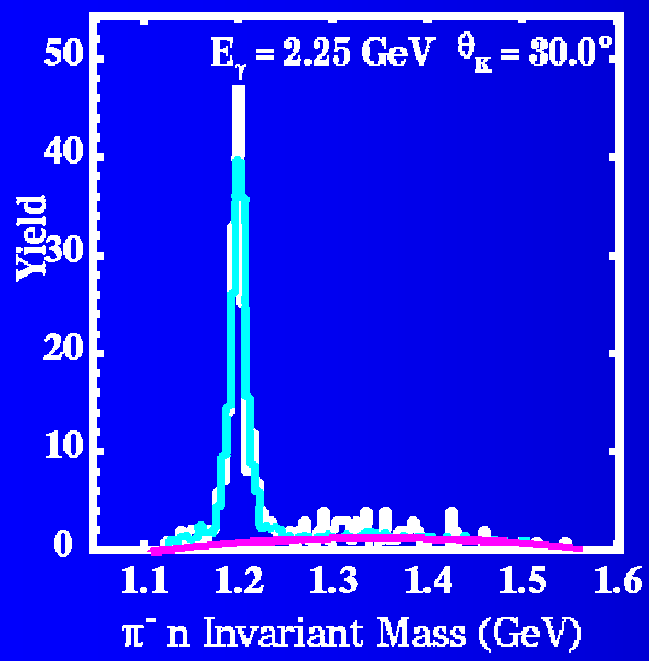
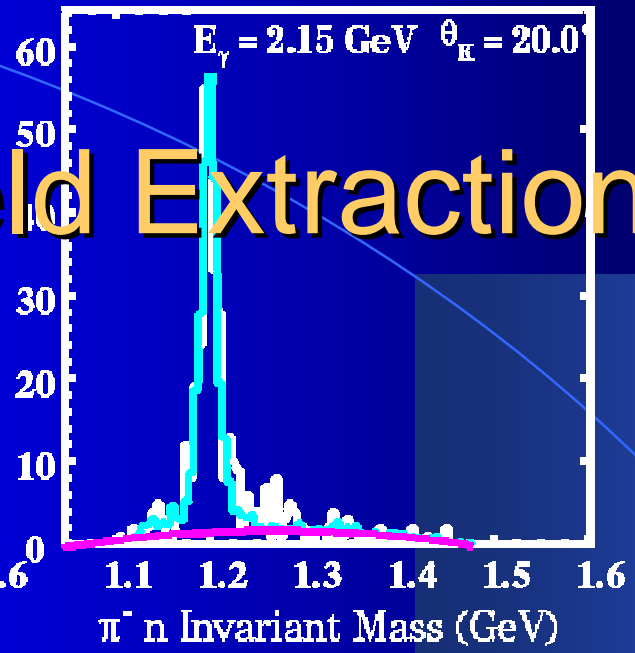
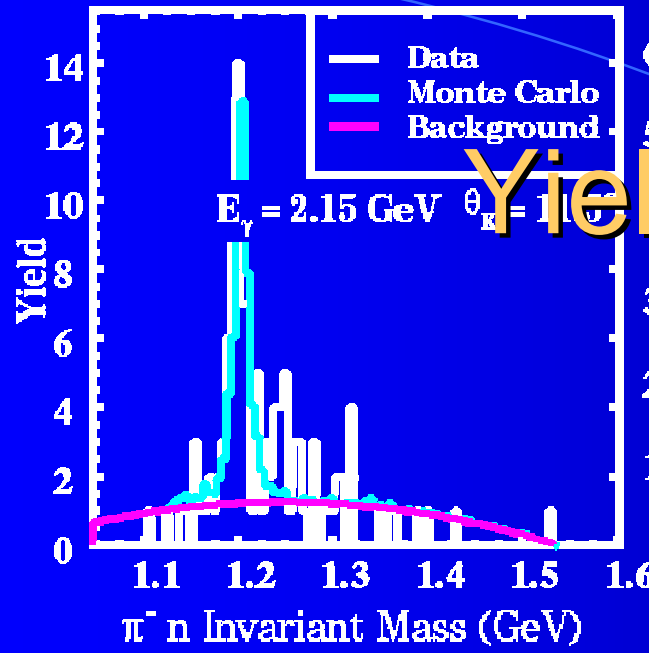
# CEBAF Large Acceptance Spectrometer



# Kaon Identification

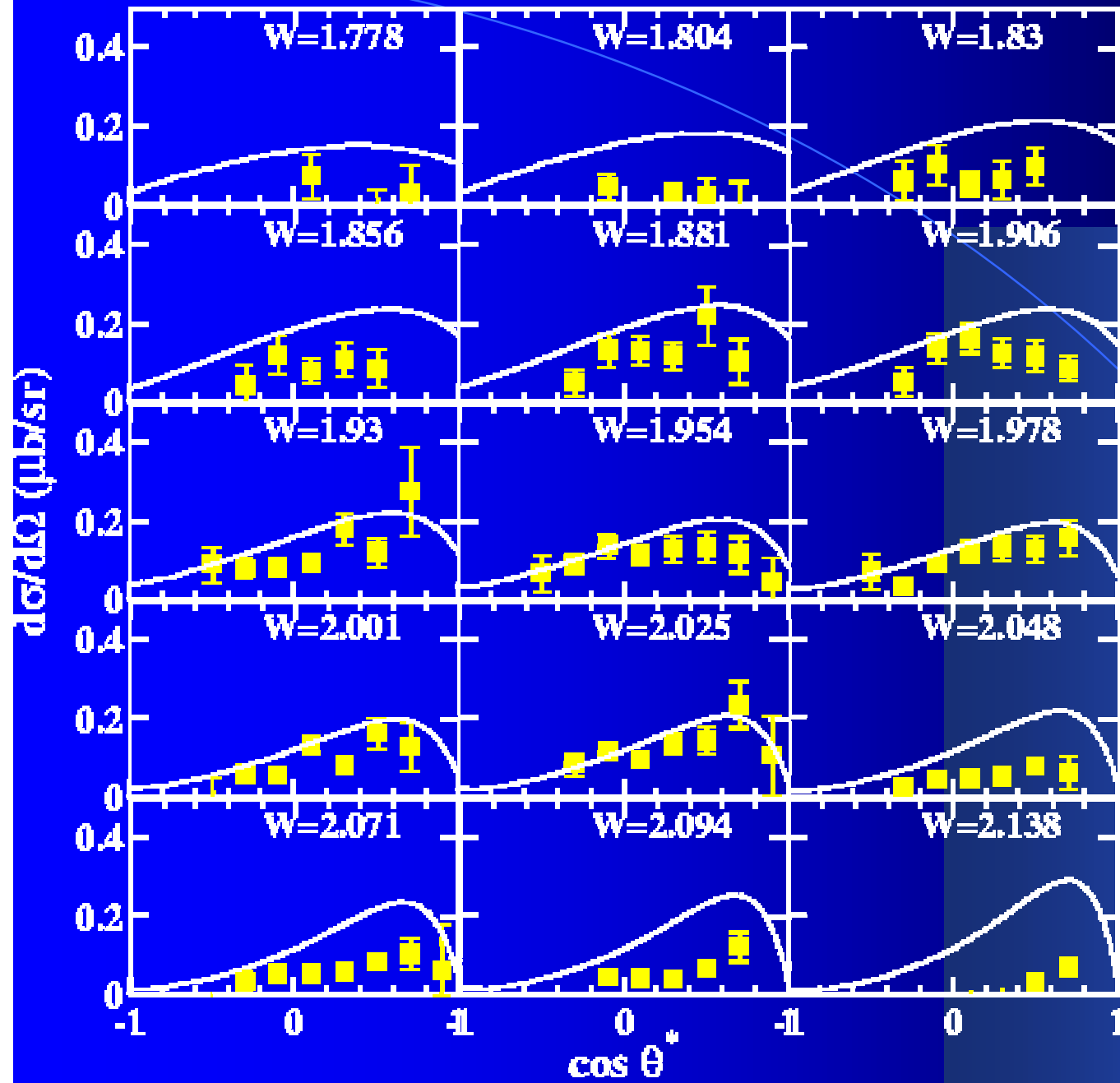


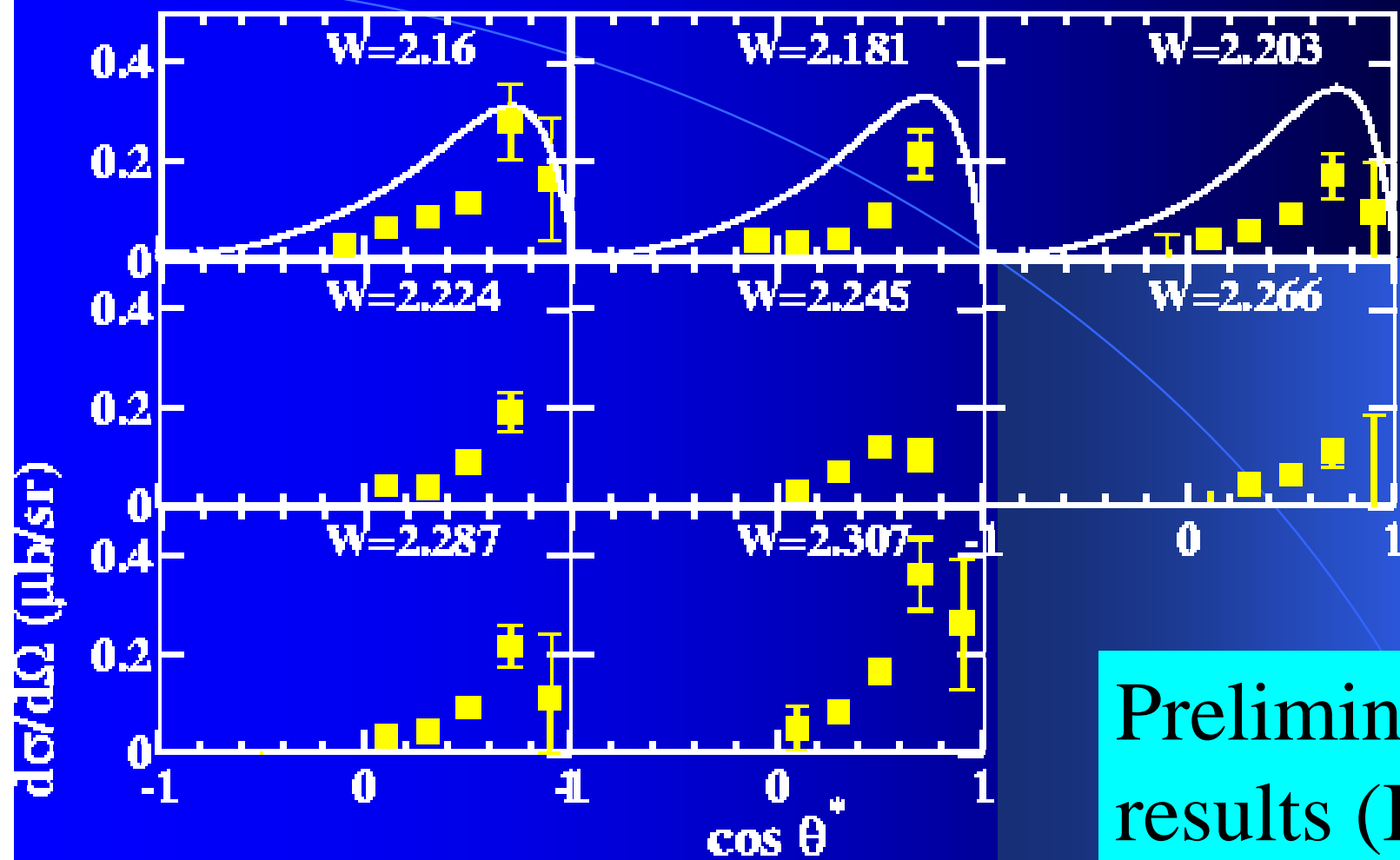
# Yield Extraction



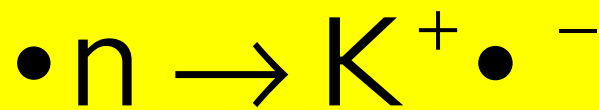


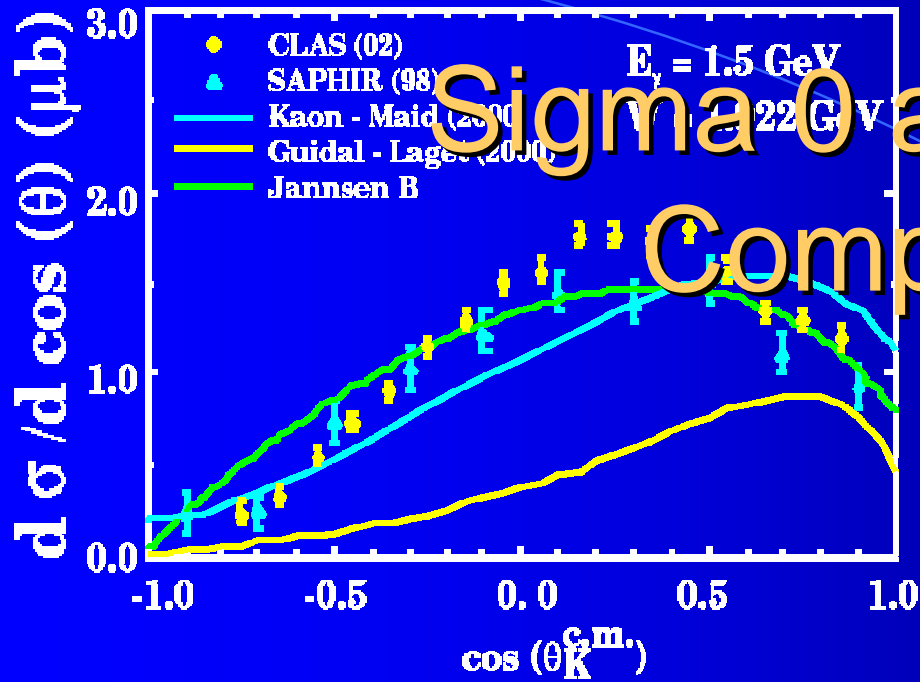
Preliminary  
results





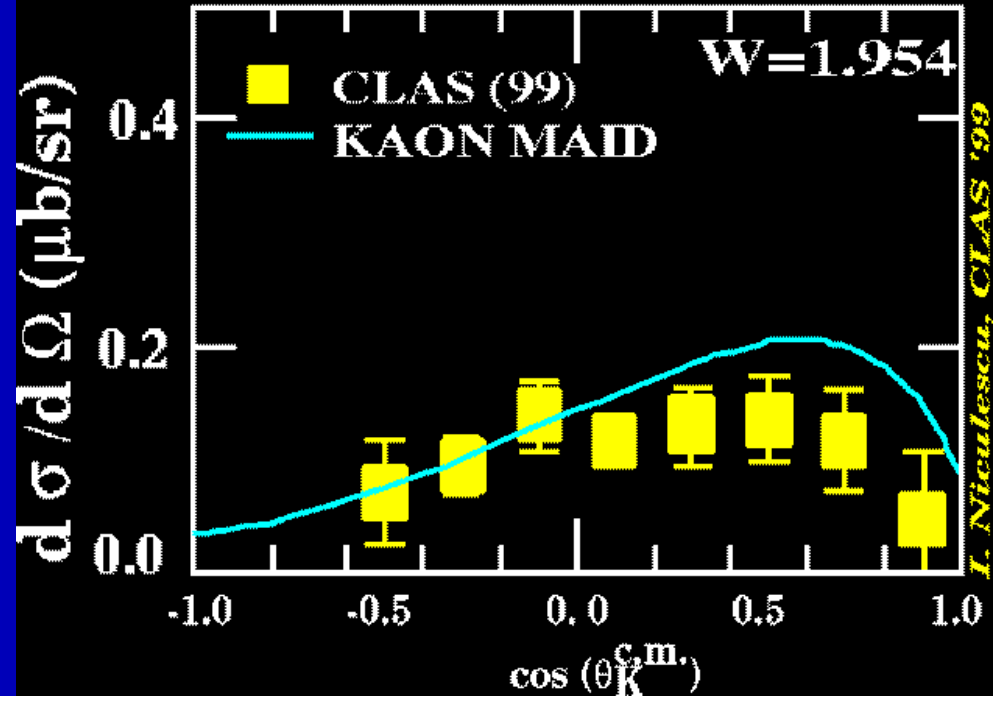
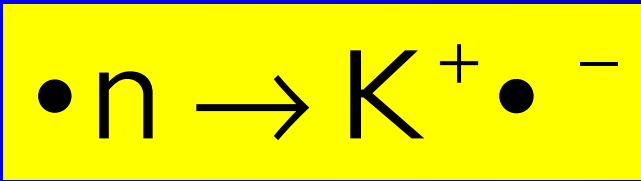
Preliminary  
results (II)





J. McNabb, P. J. Thomas, 2002

# Comparison of $\Sigma^0$ and $\Sigma^+$



I. Niculescu, CLAS '99