

# **Search for Pentaquark**

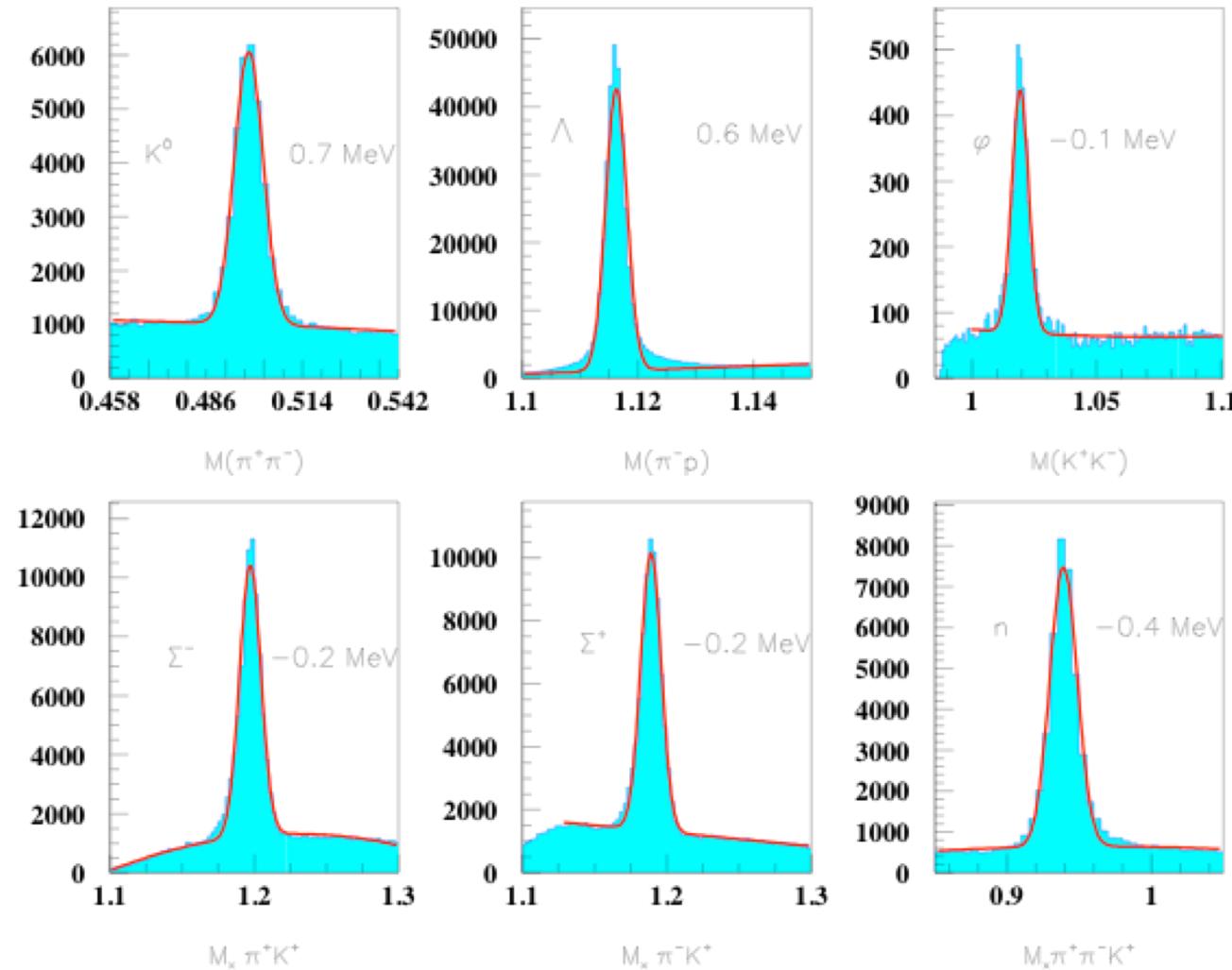
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**Jefferson Lab**

Jlab  
November 10, 2010

# G11 data set

- Analyses May 2009 **AS IS !**
- Absolutely independent code
- ODU cuts
- Loose cuts

# G11 Calibration



$$\gamma p \rightarrow \pi^+ \pi^- p X$$

$$\gamma p \rightarrow \bar{K}^0 K^0 p$$

$$K_S \rightarrow \pi^+ \pi^-$$

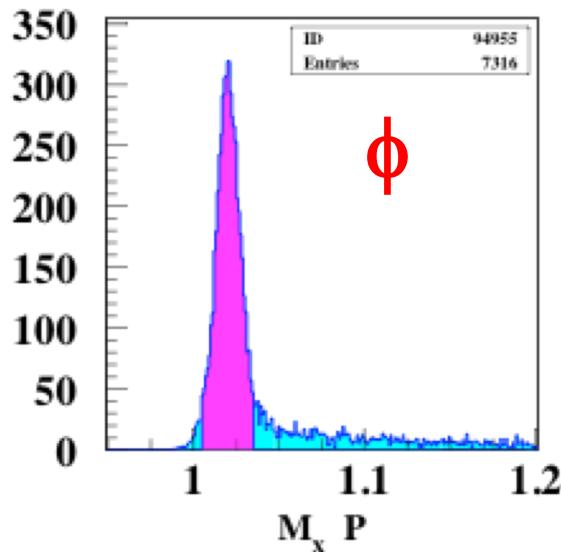
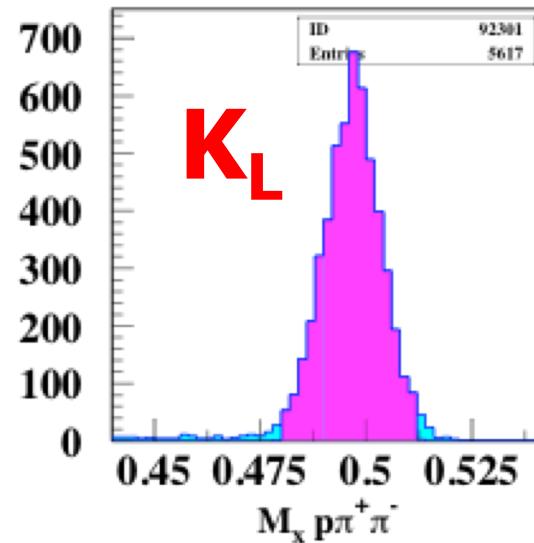
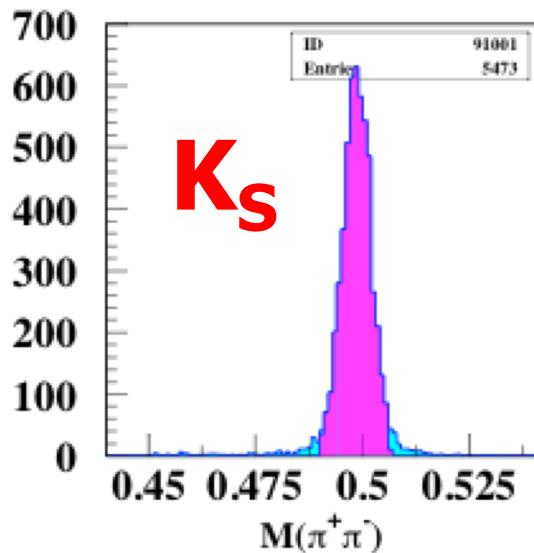
$K_L$  as missing particle in  $\gamma p \rightarrow p \pi^+ \pi^- X$

$\phi$  as missing particle in  $\gamma p \rightarrow p X$

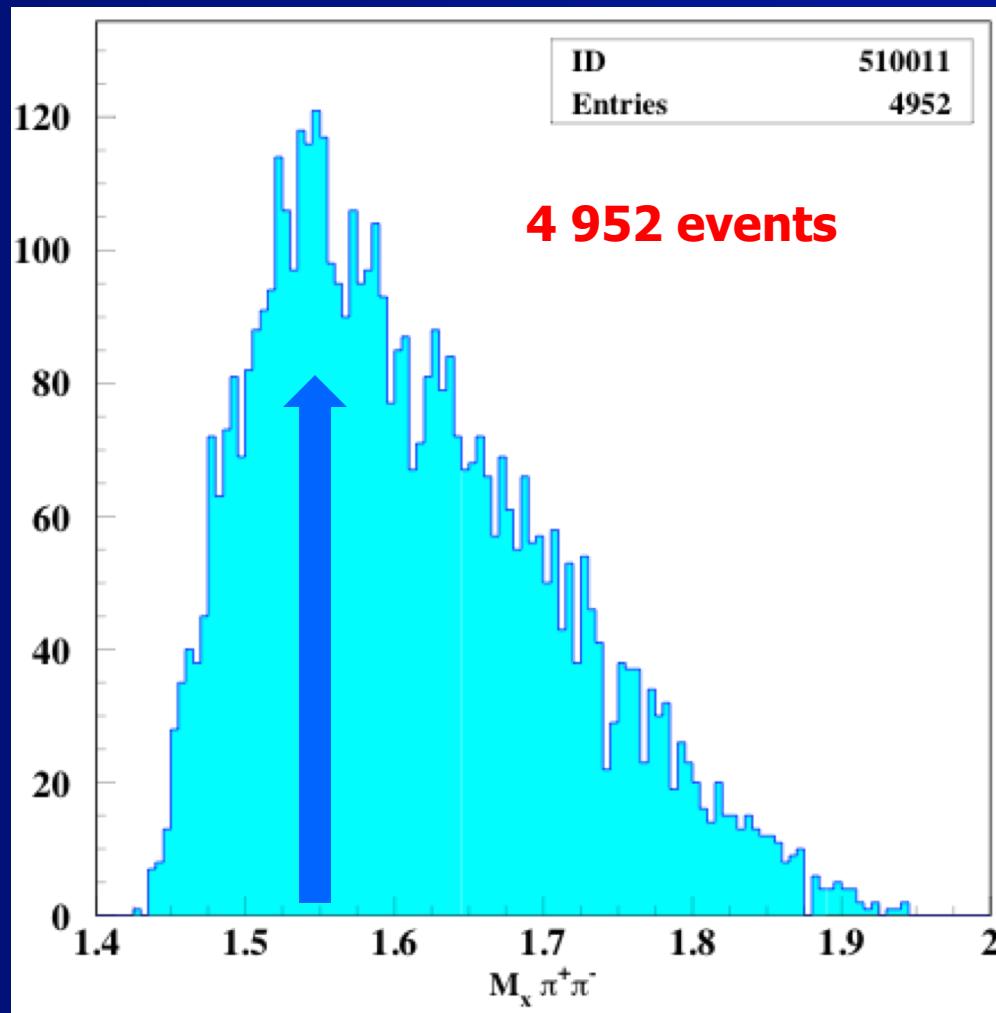
# ODU cuts

2010/11/07

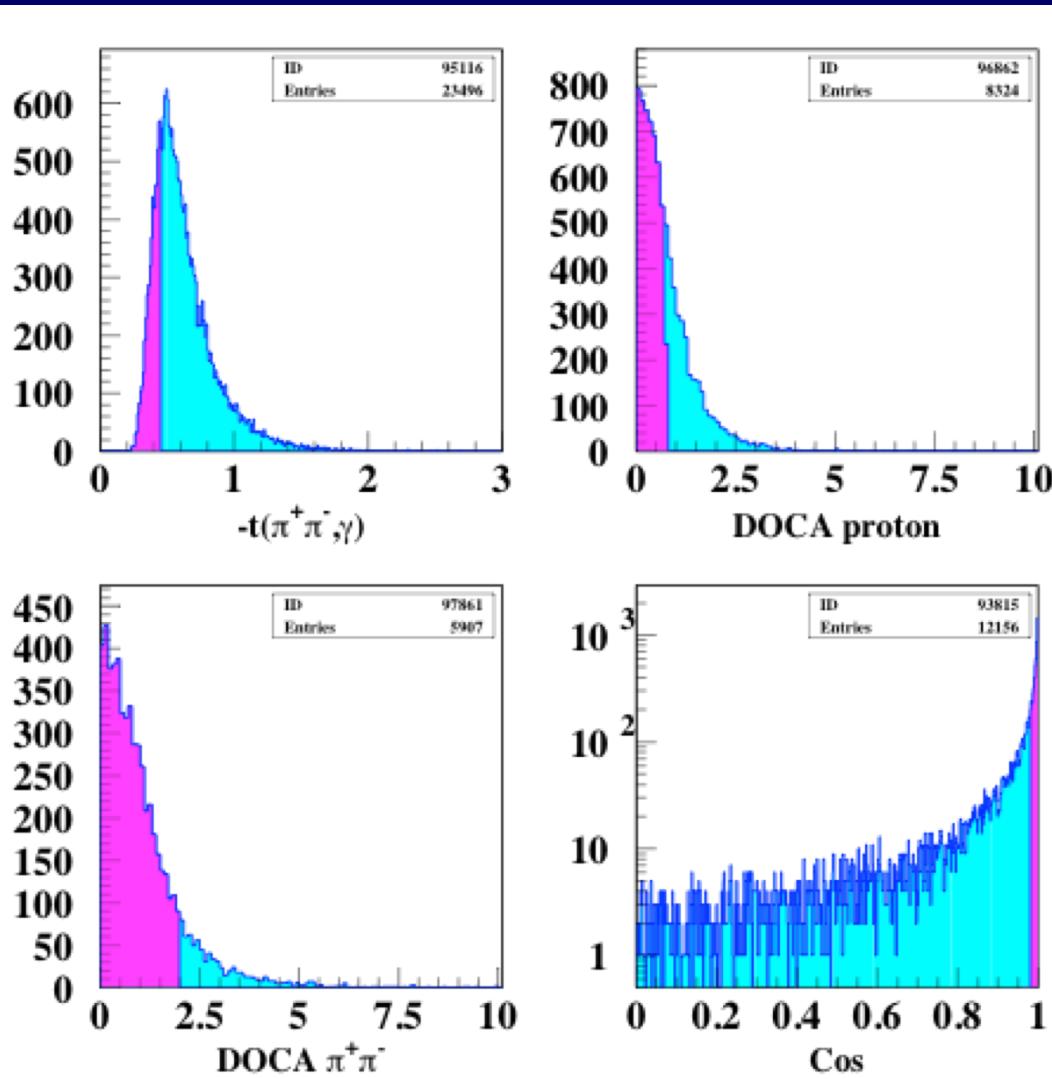
All cuts except one



# ODU cuts: $M(K_L p) = MM(K_S)$

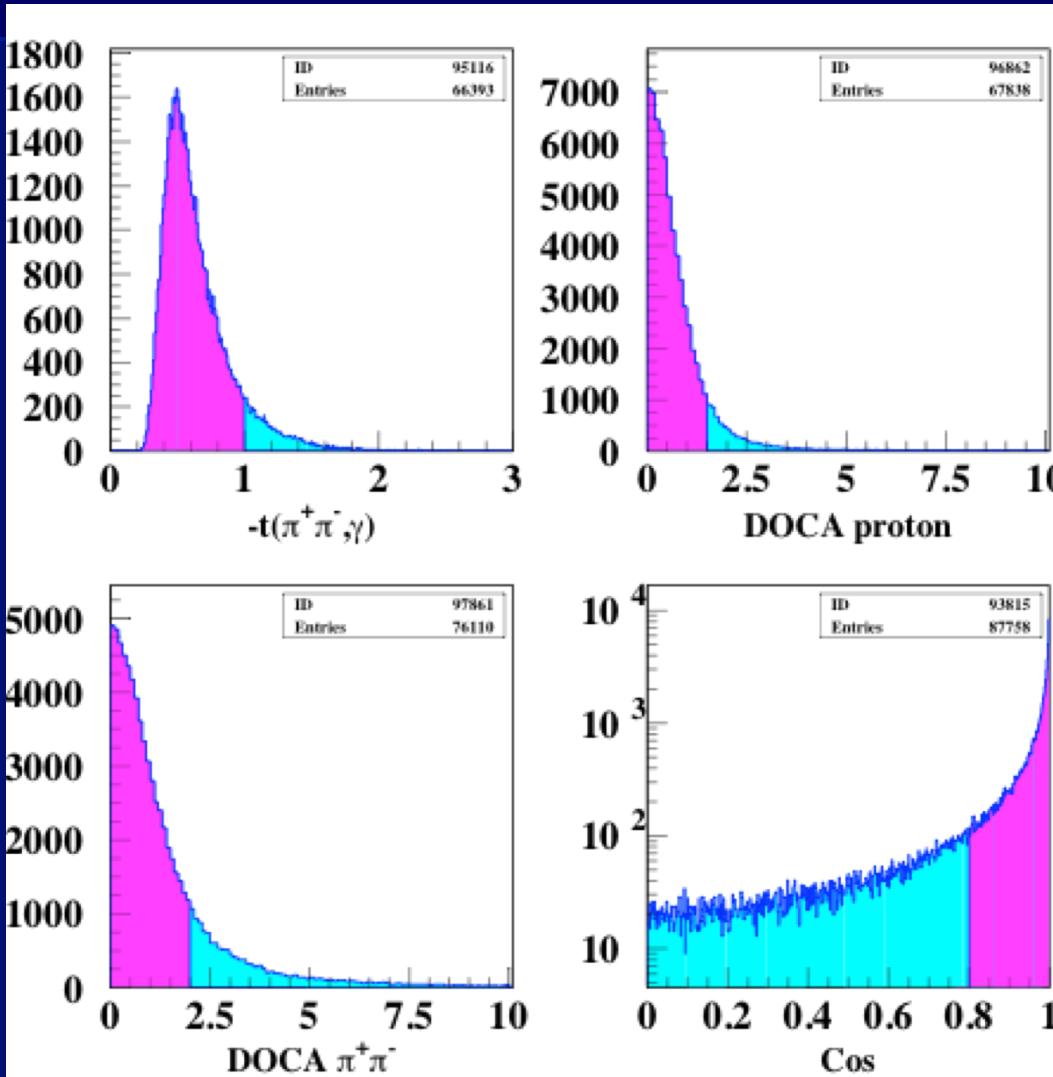


# ODU cuts



# New VK cuts

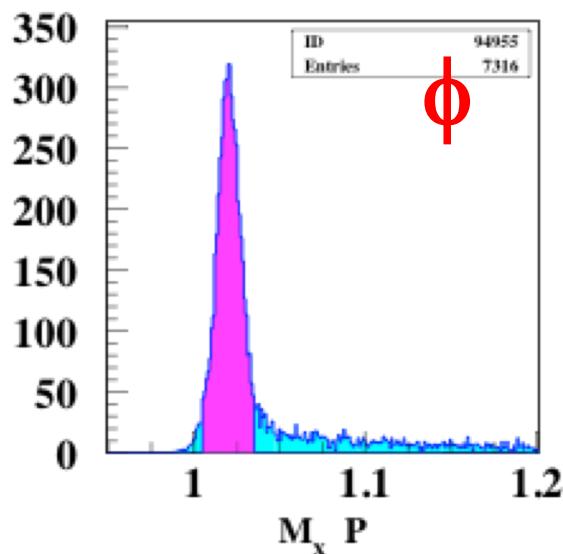
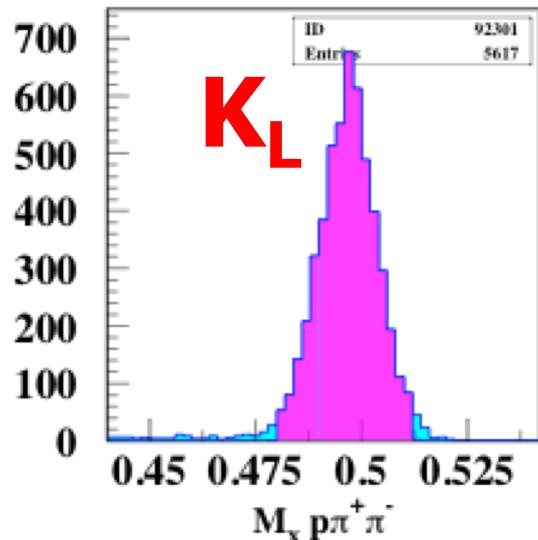
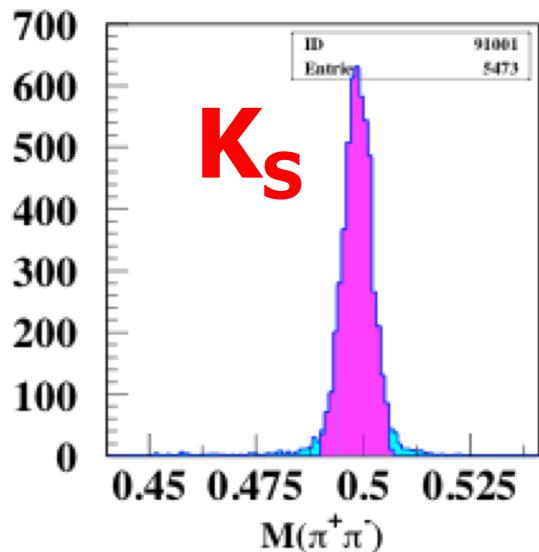
## Order of magnitude more statistics



# ODU cuts

2010/11/07

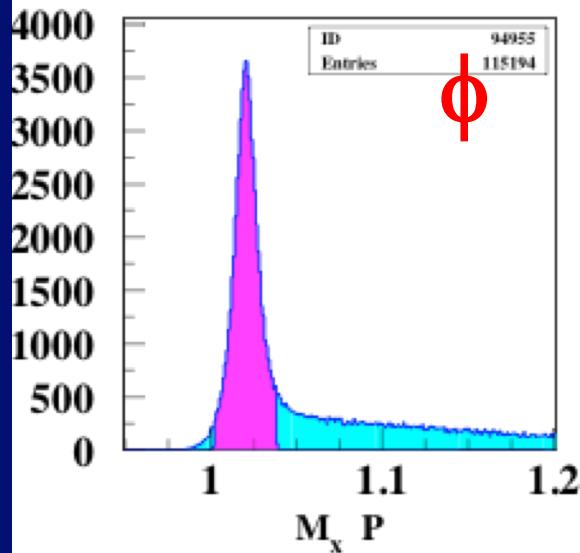
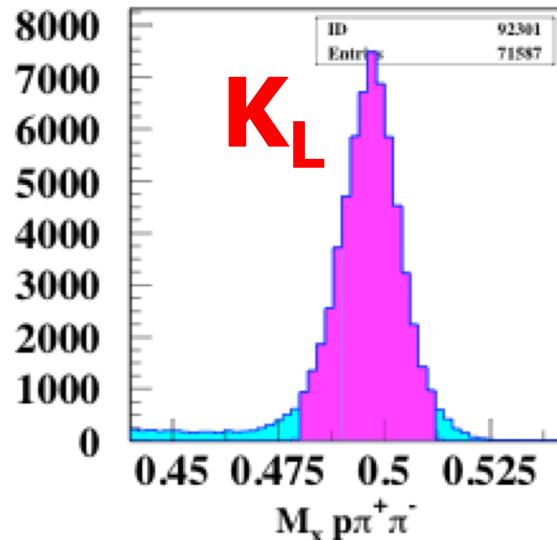
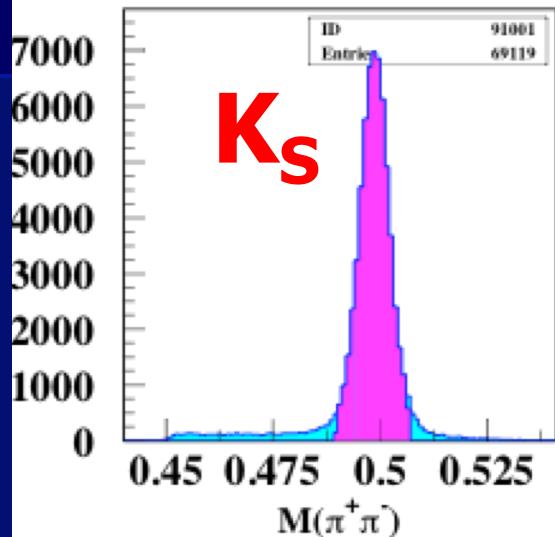
All cuts except one



# Loose cuts

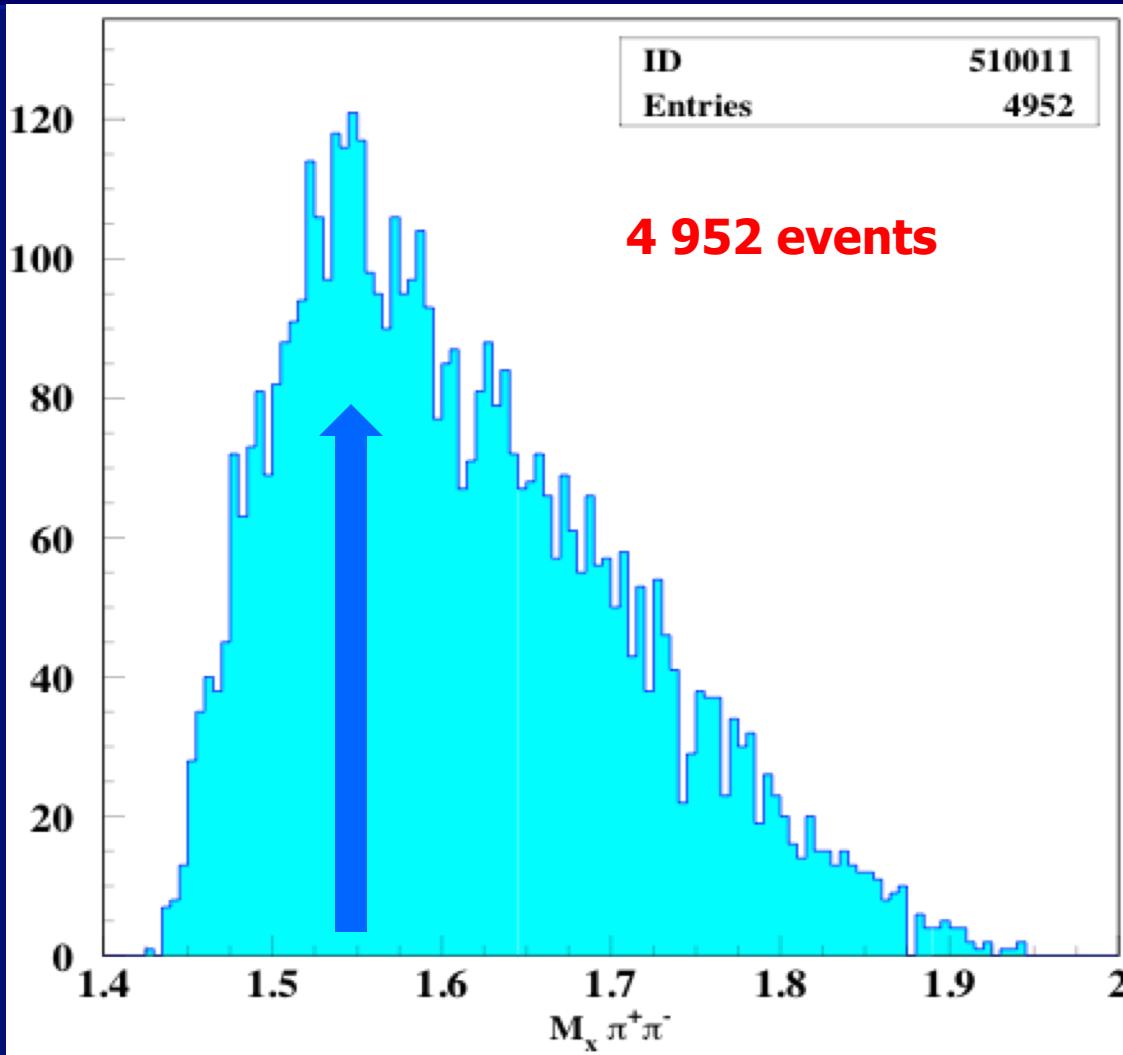
2010/11/07

All cuts except one

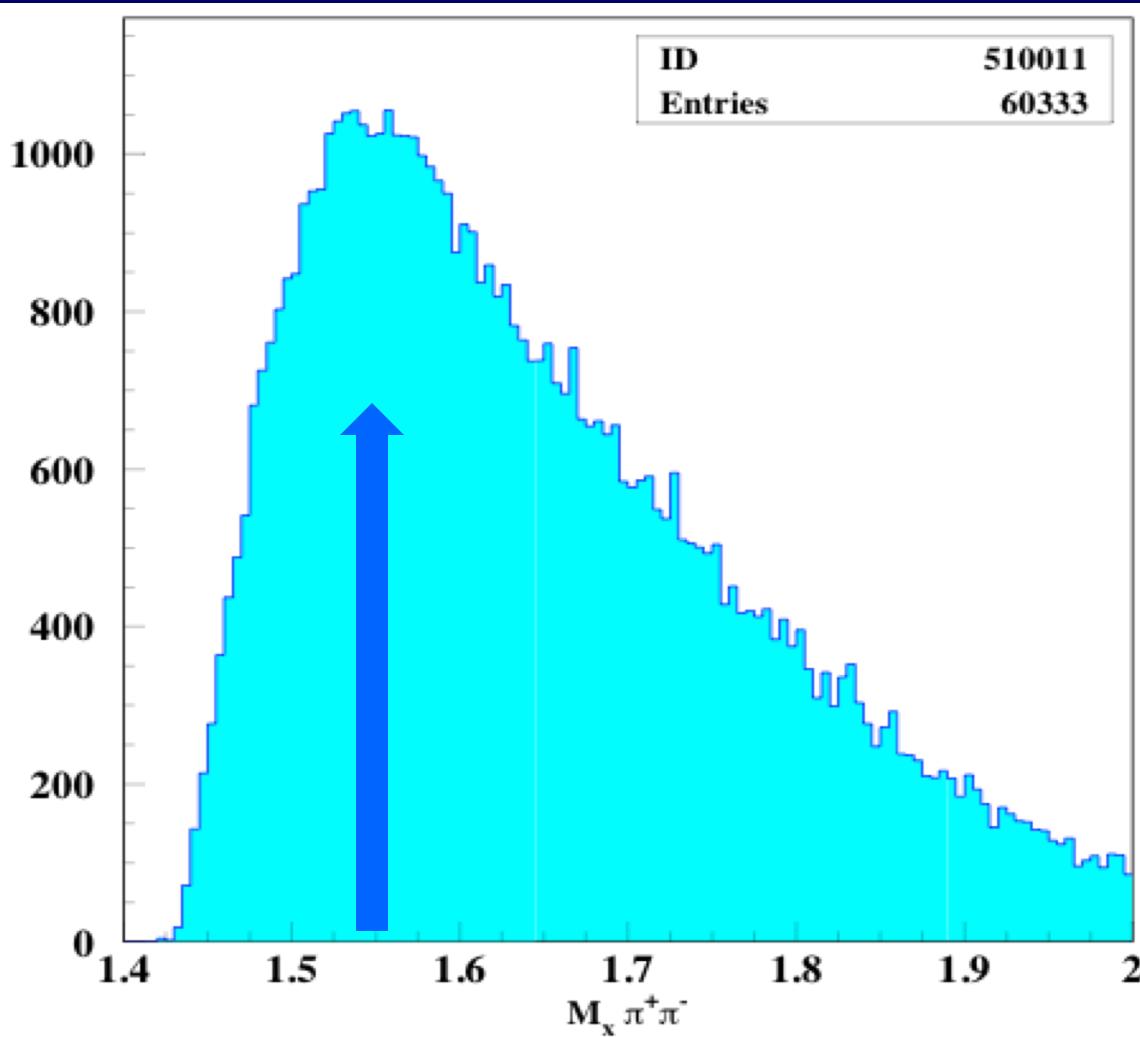


# ODU cuts

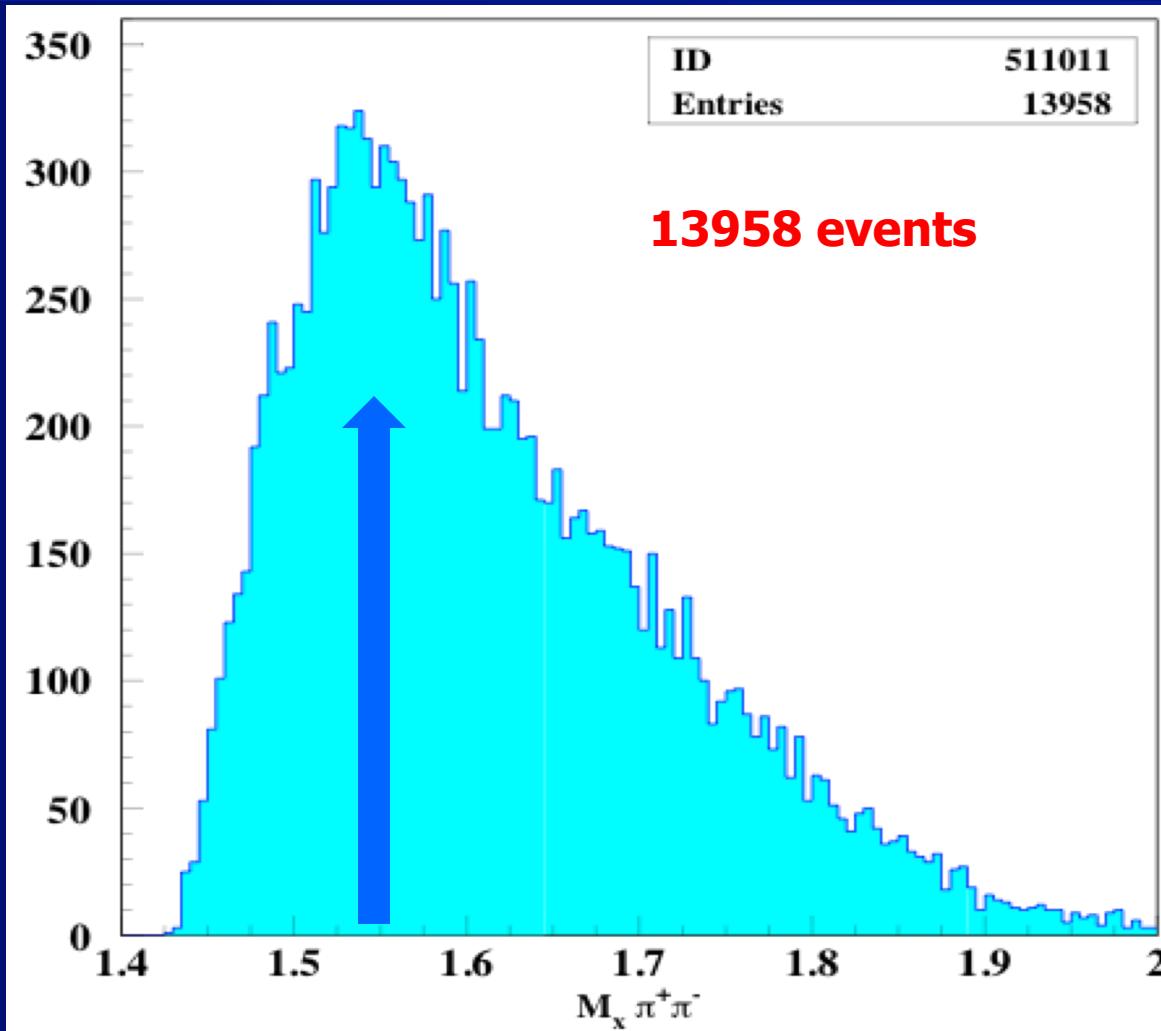
## $-t < 0.45 \text{ GeV}^2$



**M(K<sub>L</sub>P) = MM(K<sub>S</sub>)**  
**-t < 1 GeV<sup>2</sup>**



**M(K<sub>L</sub>P) = MM(K<sub>S</sub>)**  
**-t < 0.45 GeV<sup>2</sup>**



# Summary

- May 2009 analyses with ODU cuts did not show a significant pentaquark signal
- Some cuts were opened to increase the statistics by order of magnitude with comparable data quality
- No signal were observed as well.

# Remarks

- Several hours of discussion will not resolve all questions/concerns of the previous review committees.
- Two groups of experts worked very hard ~4 years. Elton presented the final conclusion of the Committees.
- We need to focus on the appeal of the ODU group. The group requested to approve by collaboration one of two possible avenues to proceed:
  - To form an Ad Hoc Committee
  - To submit the paper as not CLAS collaboration paper.