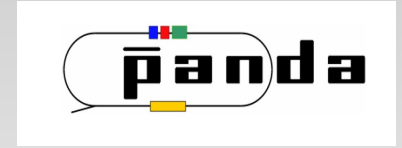


# $\bar{p}p \rightarrow e^+e^-\pi^0$ with Fastsim

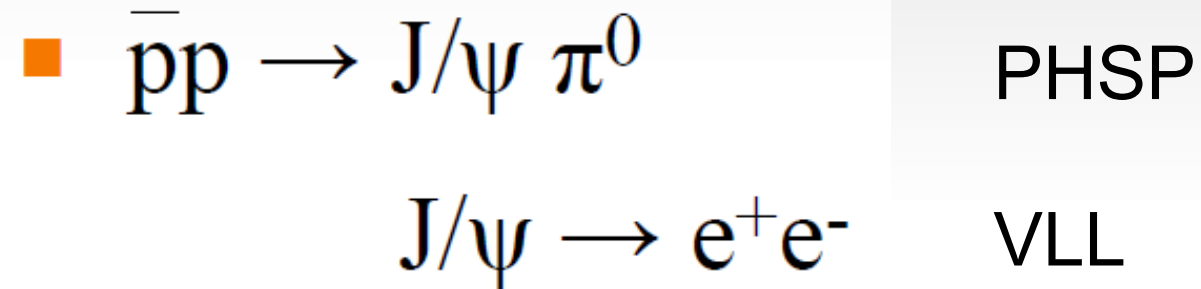


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Pbeam = 10 GeV/c

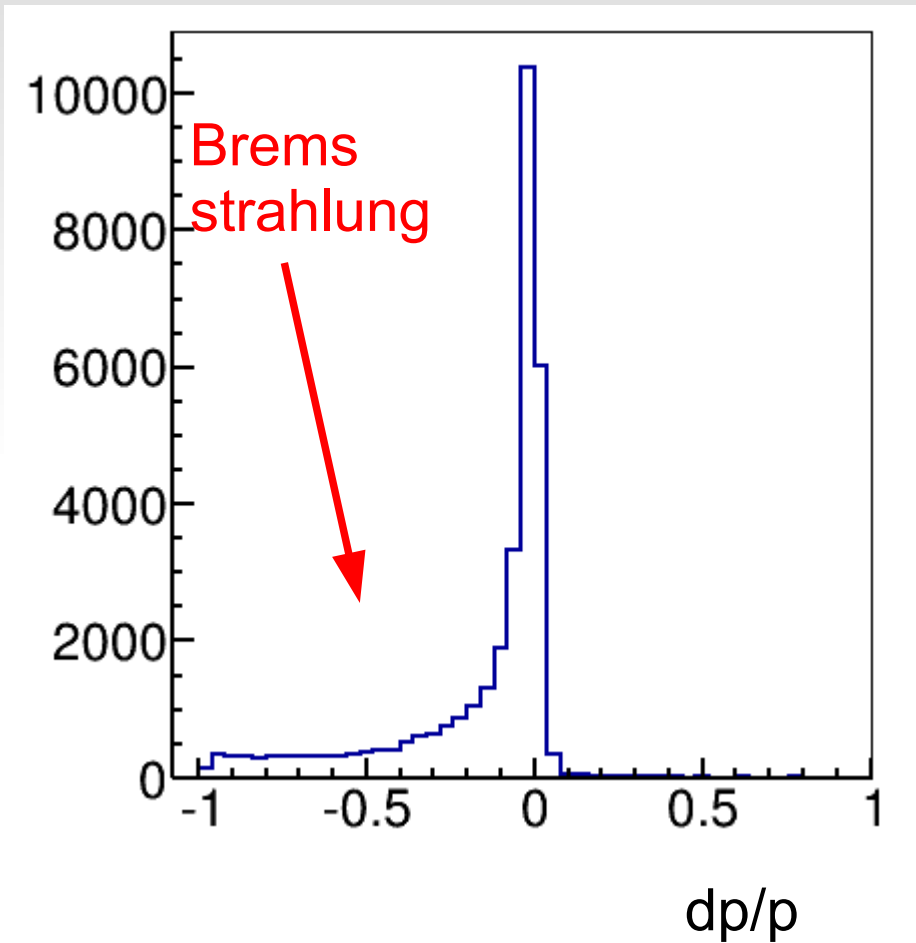
Externals: apr13

PandaRoot: mar14 (version 24467)

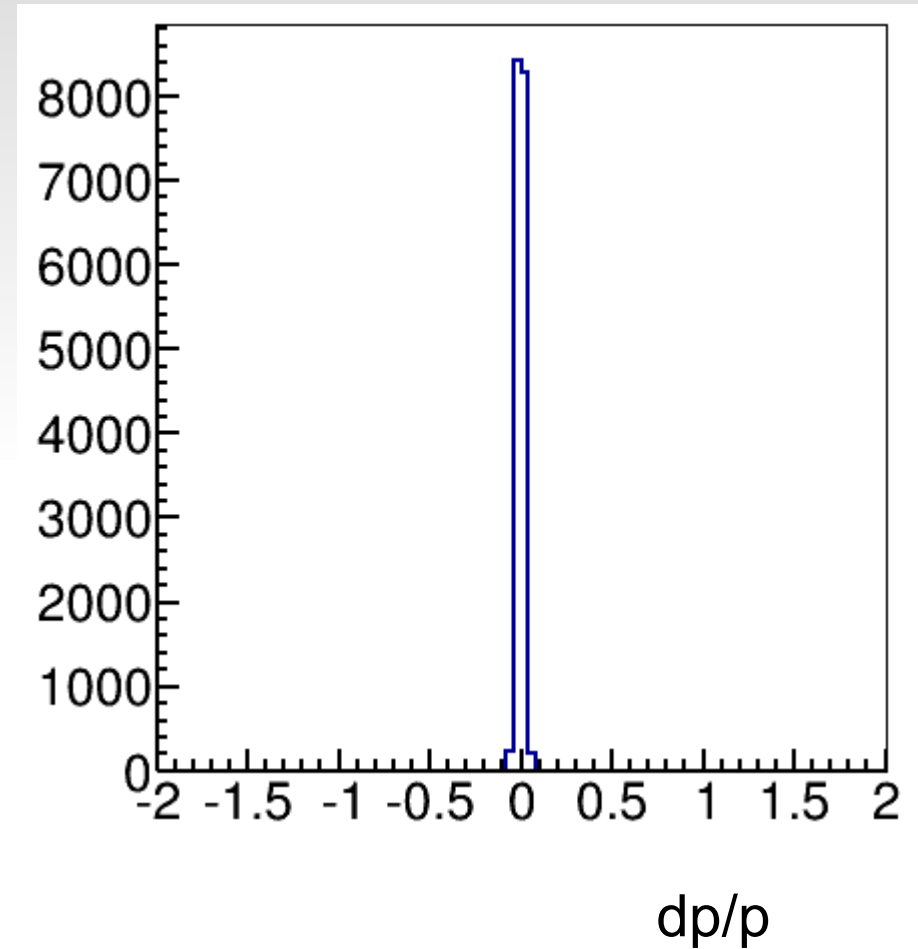


# Electron resolution

Full simulation

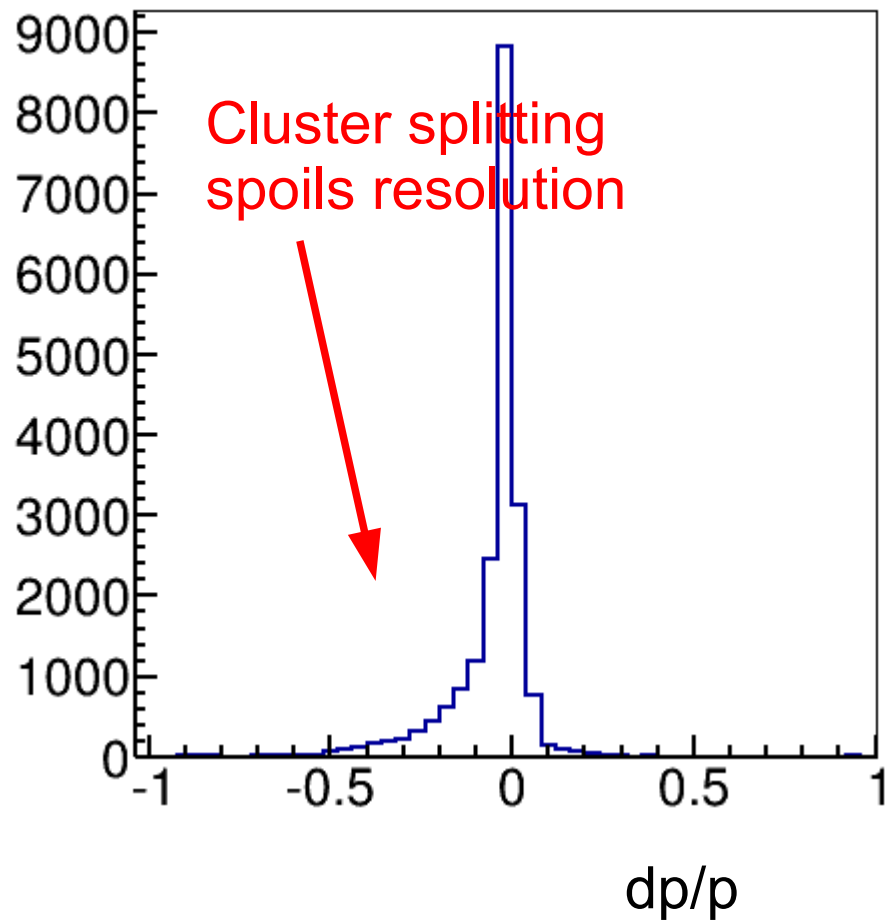


Fast simulation

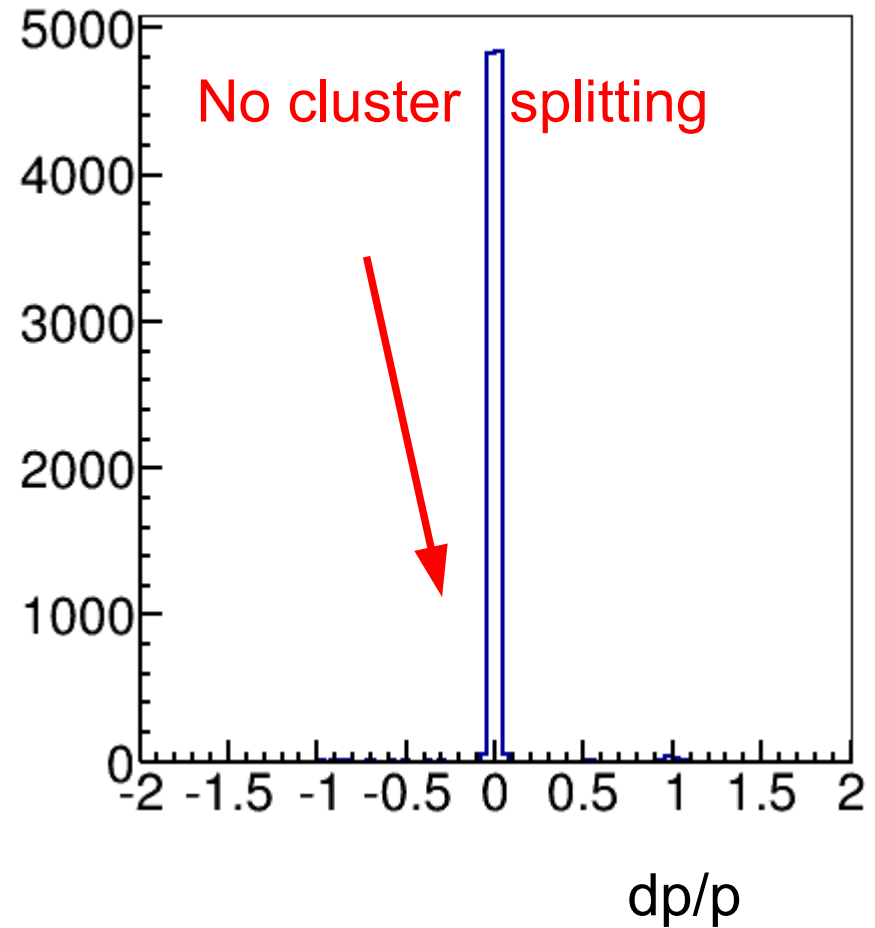


# Pizero resolution

Full simulation

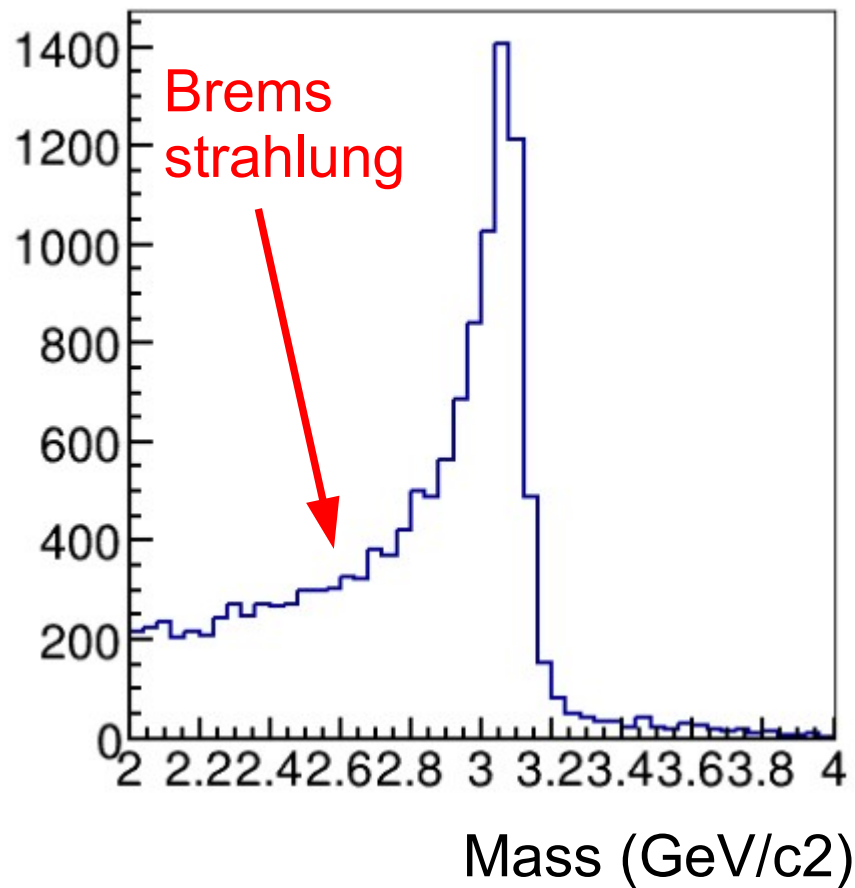


Fast simulation

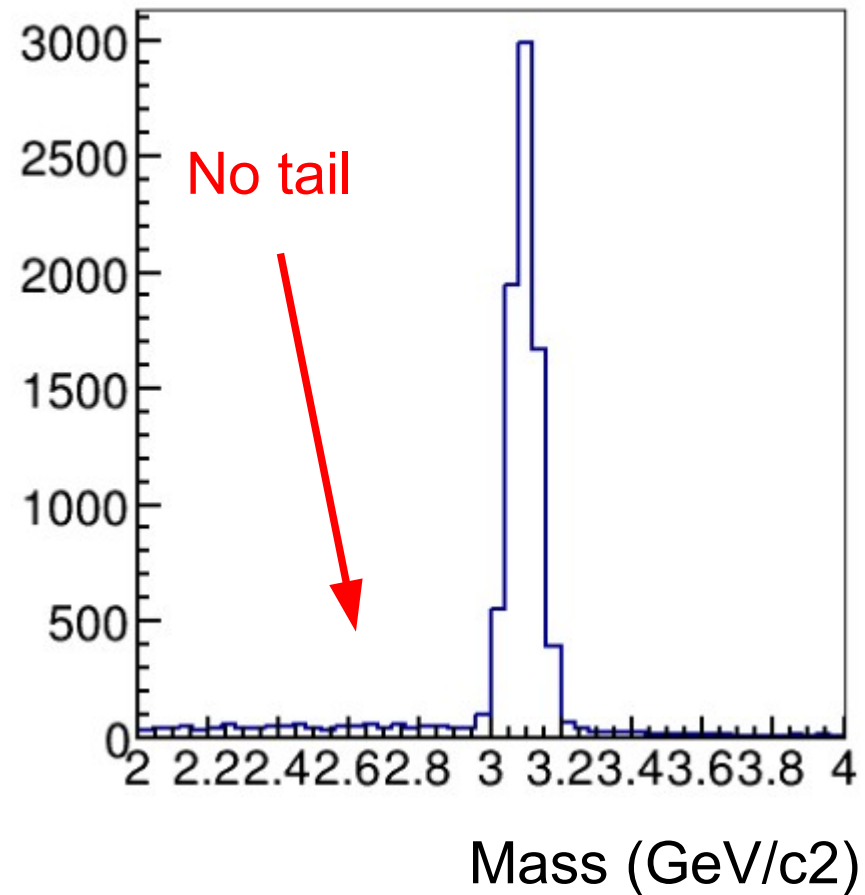


# J/ $\psi$ mass

Full simulation

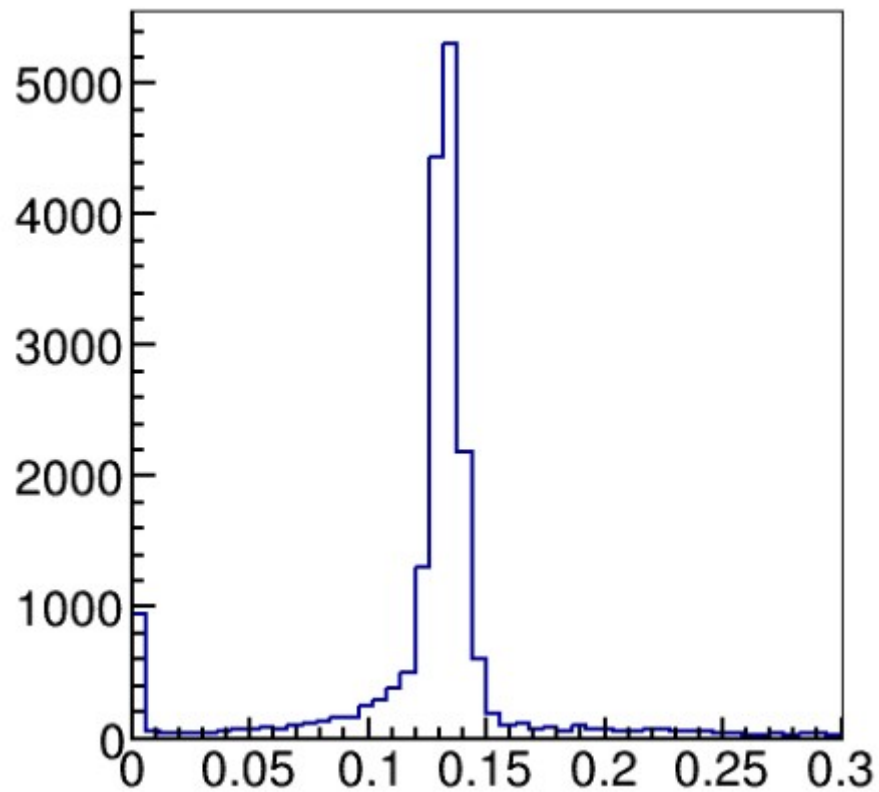


Fast simulation



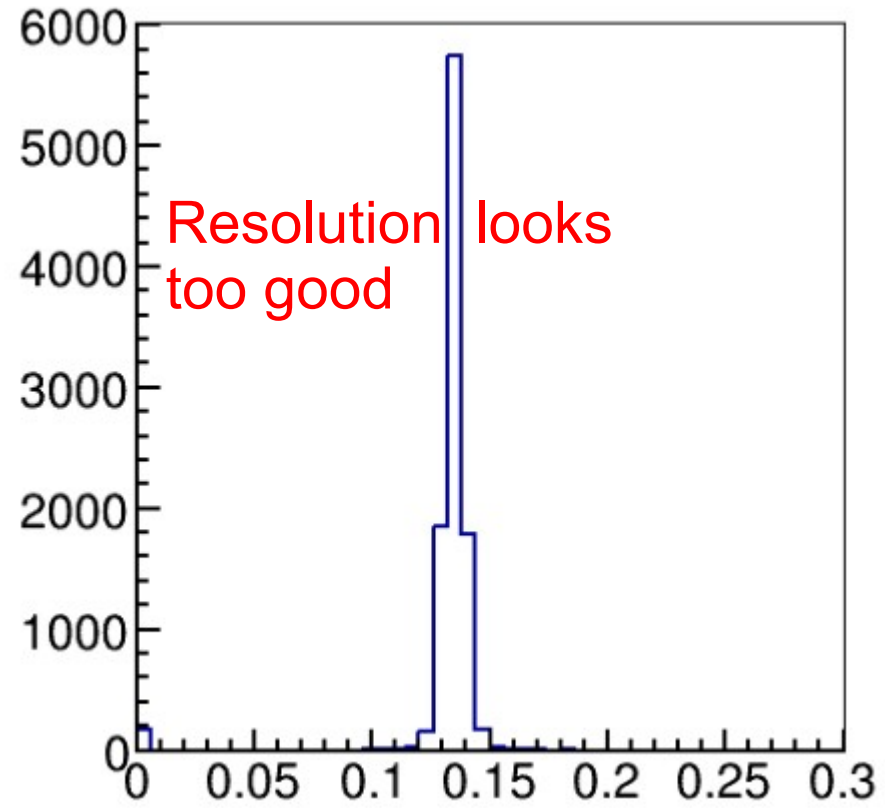
# $\pi^0$ mass

Full simulation



Mass (GeV/c<sup>2</sup>)

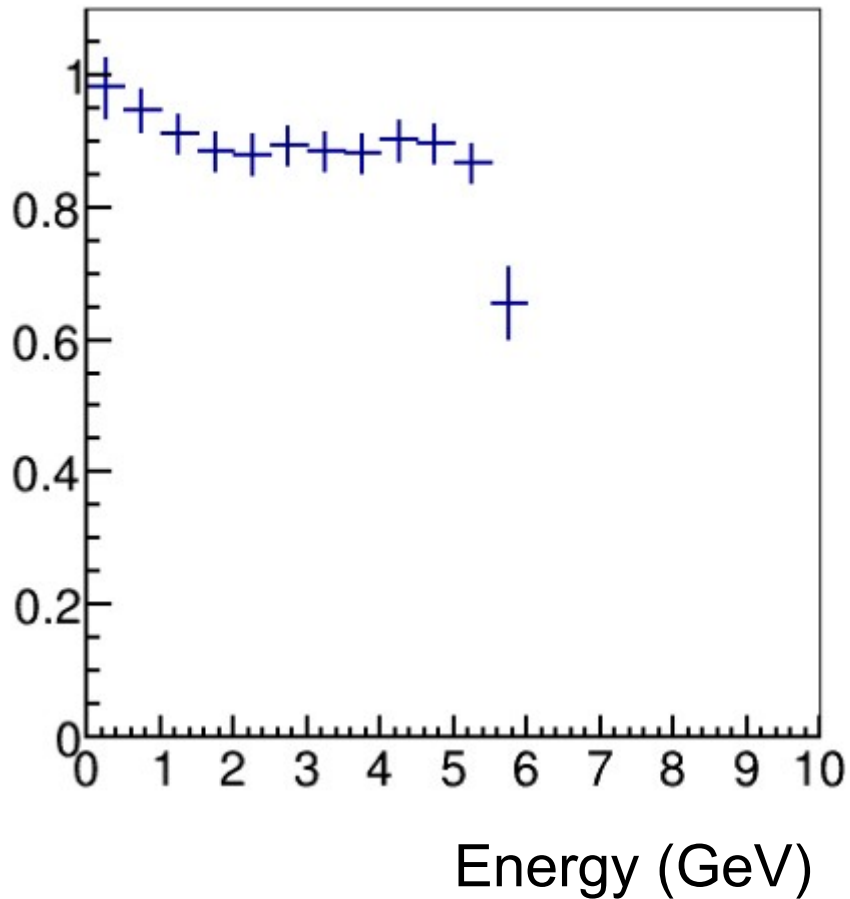
Fast simulation



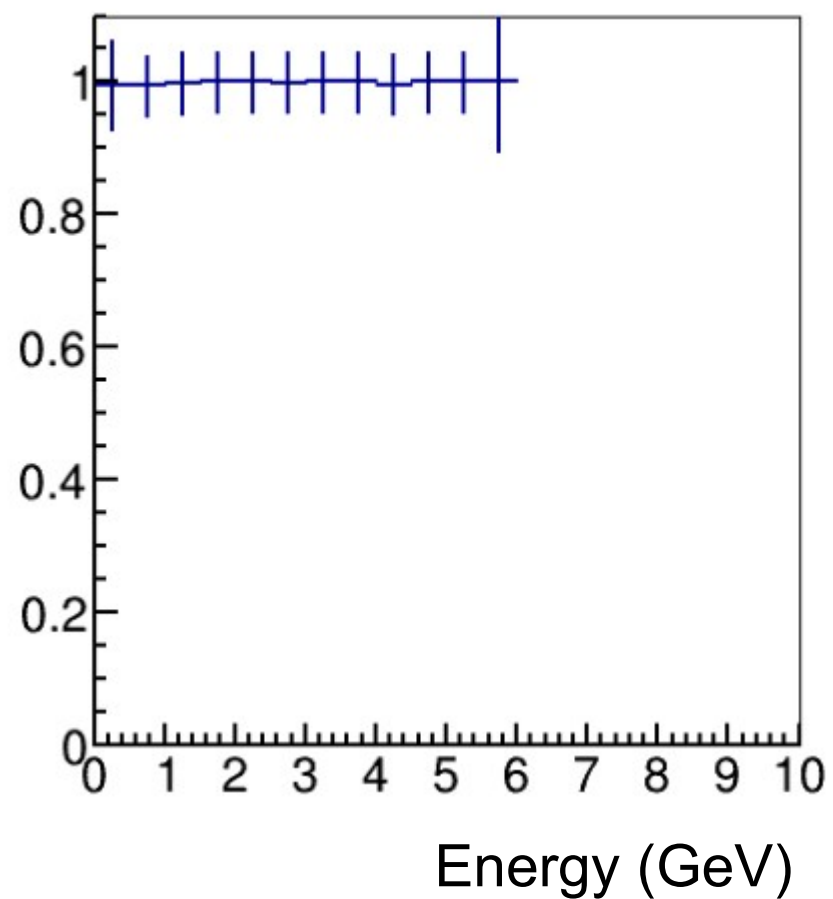
Mass (GeV/c<sup>2</sup>)

# $\pi^0$ efficiency

Full simulation



Fast simulation



# Event efficiencies

## Full simulation

20000 events

67.2% two electrons found  
100% two gammas found

66.5% Jpsi found in mass  
89.4% Pizero found in mass

58.6% events reconstructed

## Fast simulation

10000 events

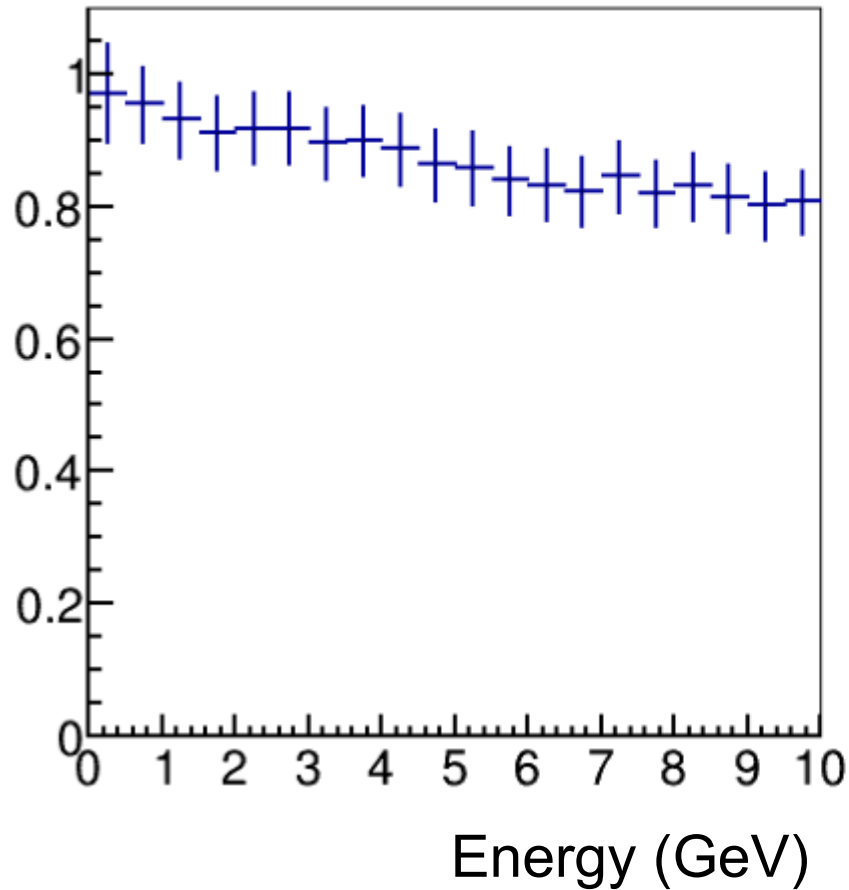
73.7% two electrons found  
100% two gammas found

73.7% Jpsi found in mass  
**99.8% Pizero found in mass**

73.6% events reconstructed



# $\pi^0$ efficiency



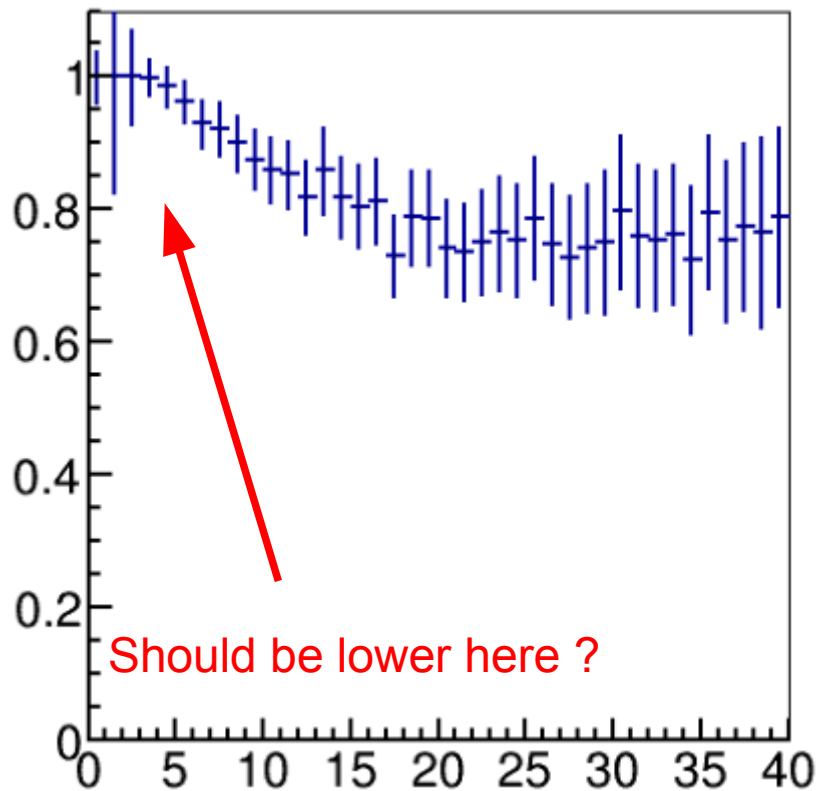
$\pi^0$  efficiency drops off linearly with energy

(from a box simulation)

# Problems ?

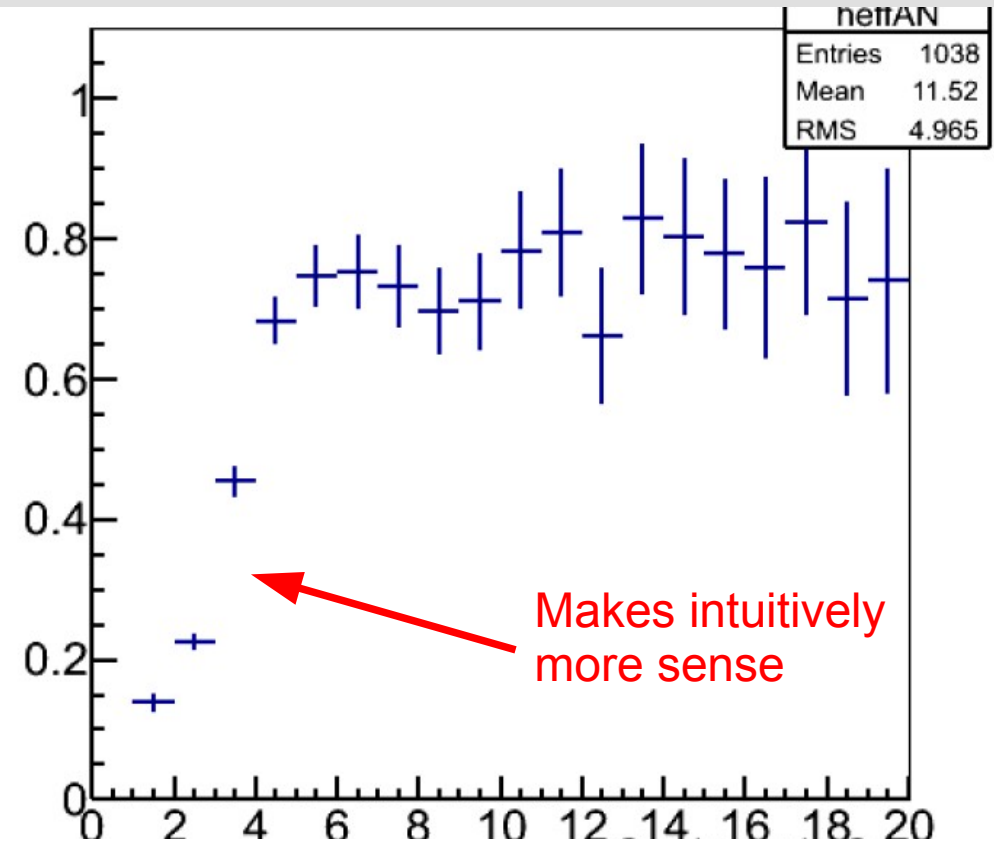
# $\pi^0$ efficiency (problem...)

Box simulation april 2014



$\gamma\gamma$  opening angle ( $^\circ$ )

Ditto, two years ago



$\gamma\gamma$  opening angle ( $^\circ$ )

# EMC background not in simulation

