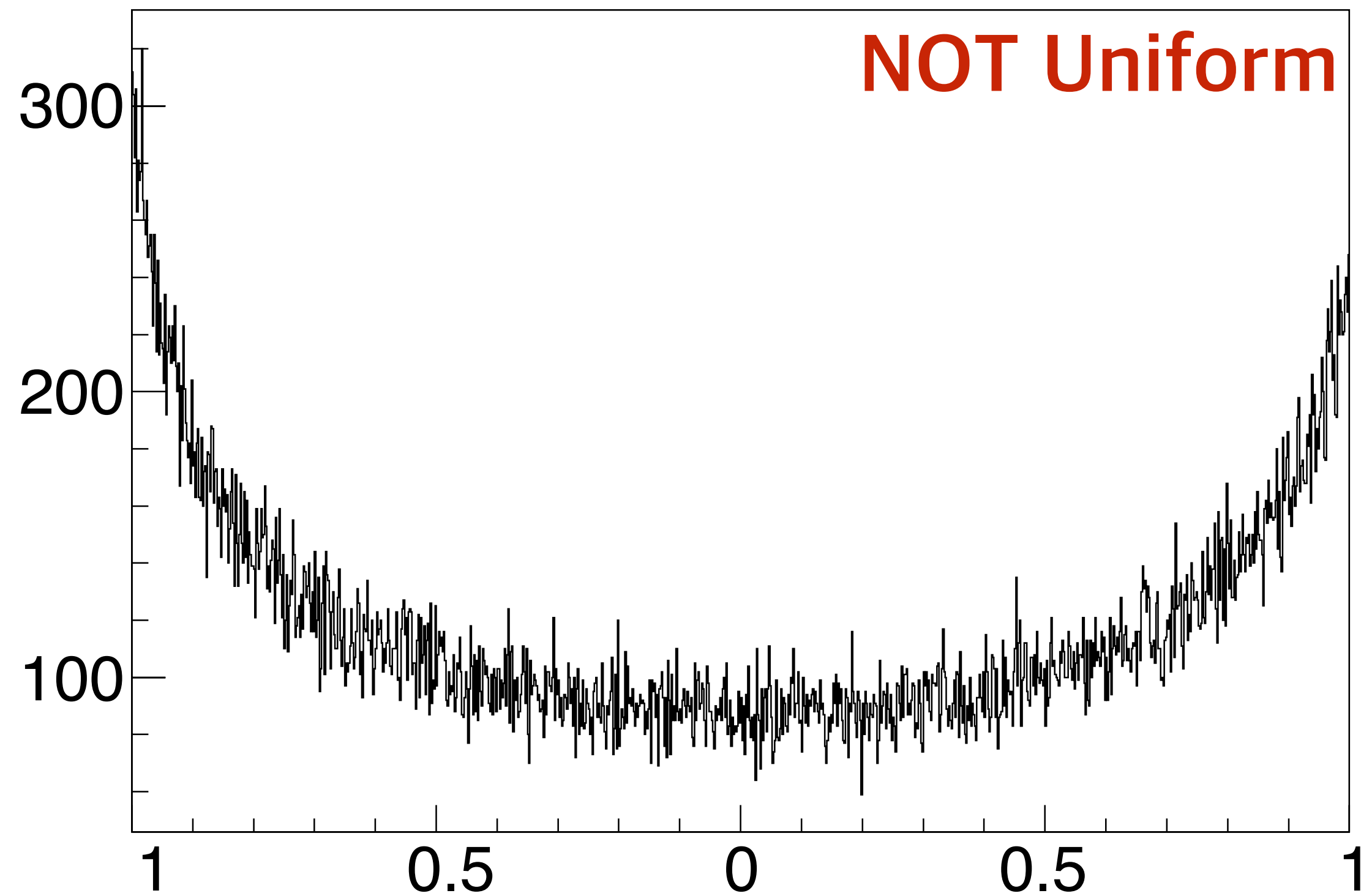


Status report (14 Nov. 2016)

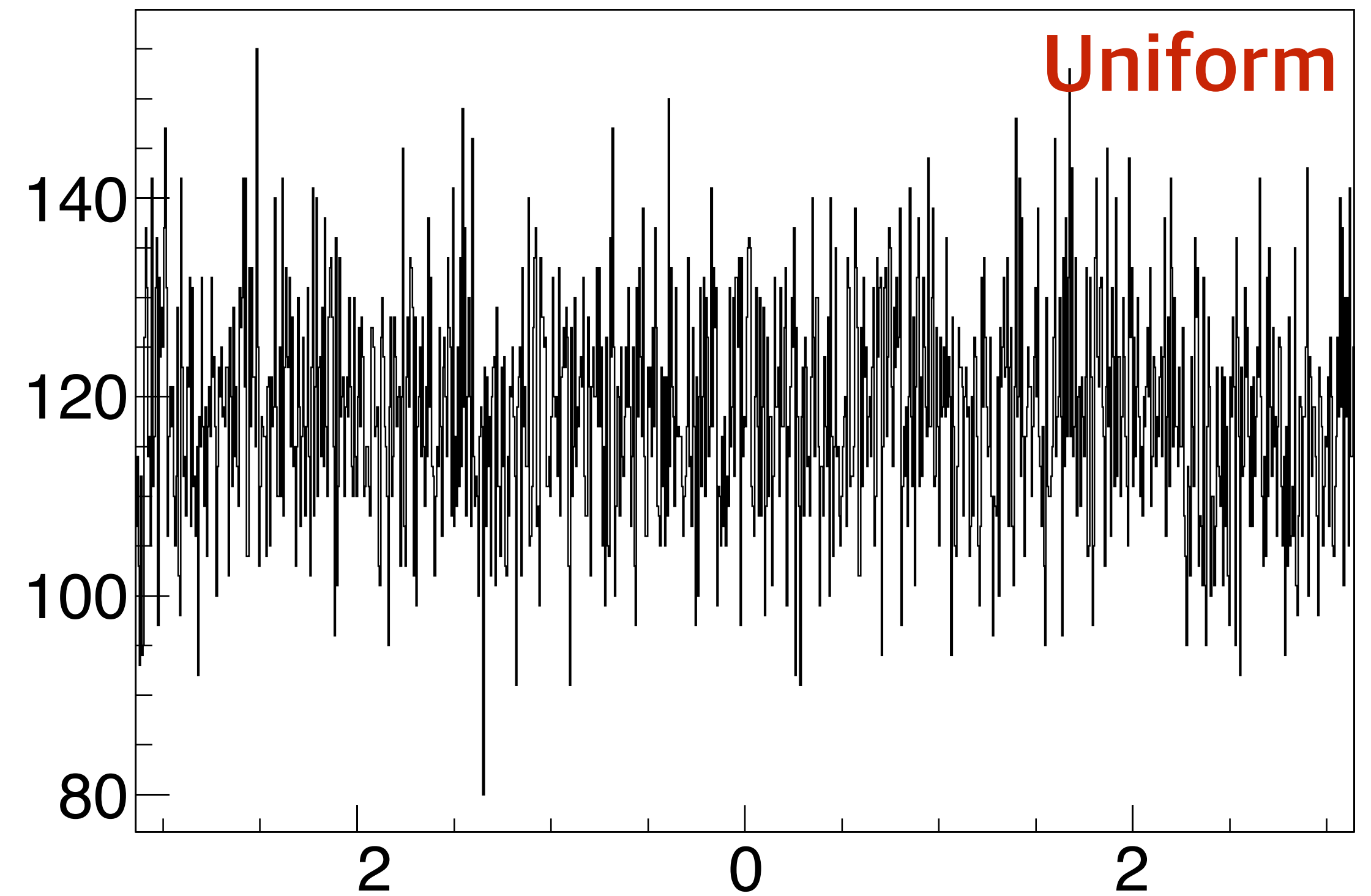
Jongwon Hwang

Previous Angular Distribution of Charged Pion

Pic Cos Theta



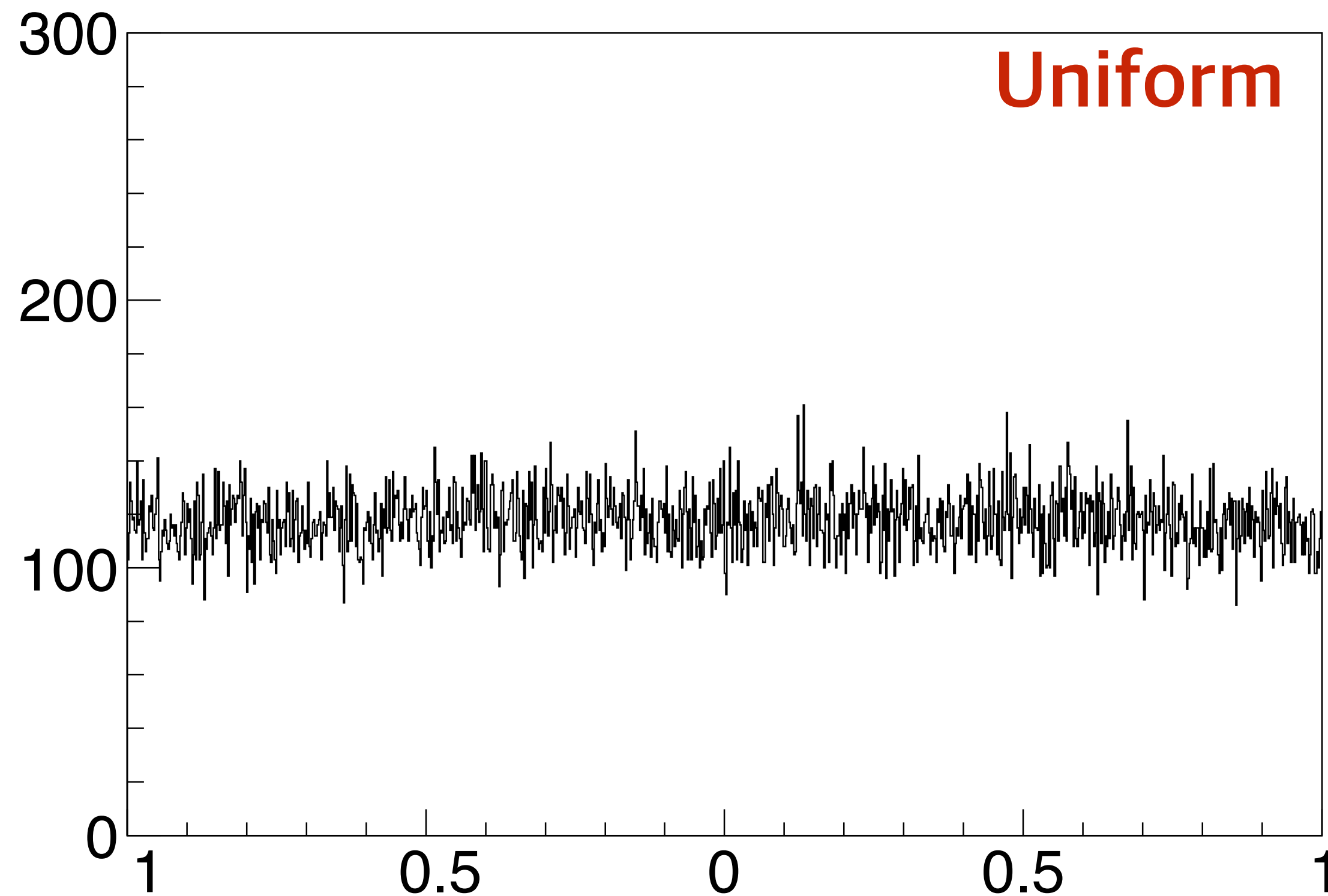
Pic Phi



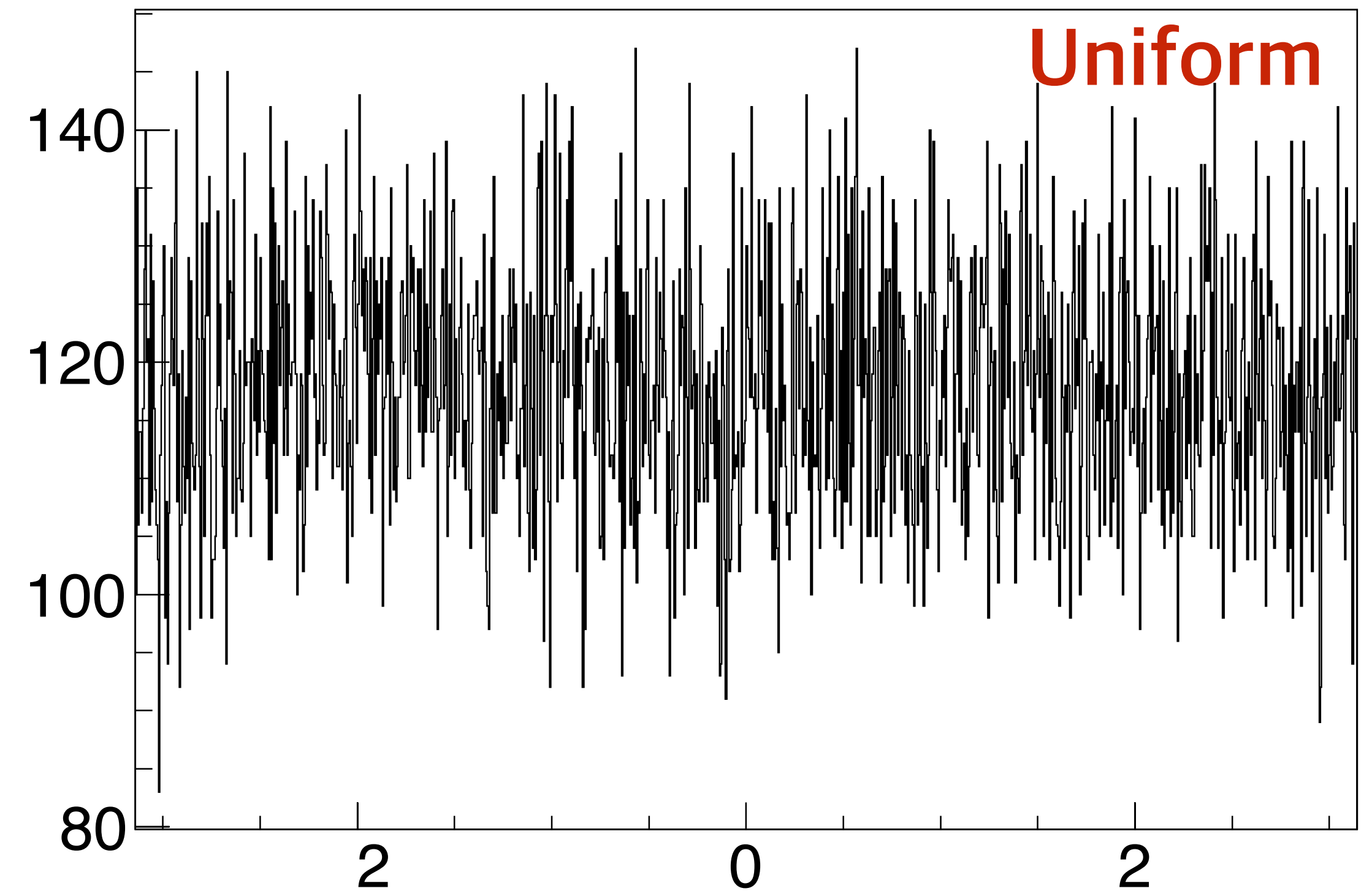
Both should be UNIFORM if the distribution is isotropic.

Fixed Distribution of Charged Pion

Pic Cos Theta



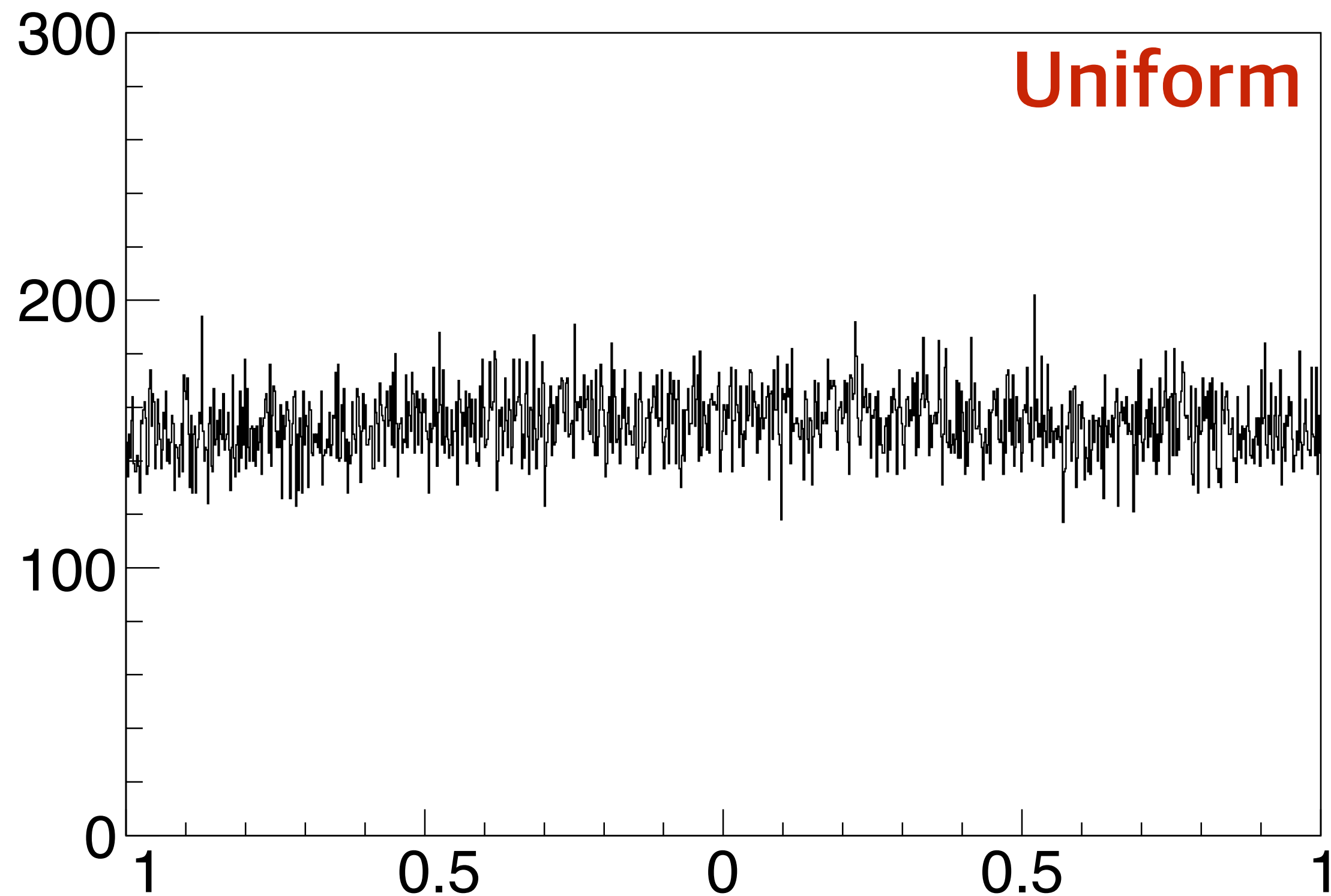
Pic Phi



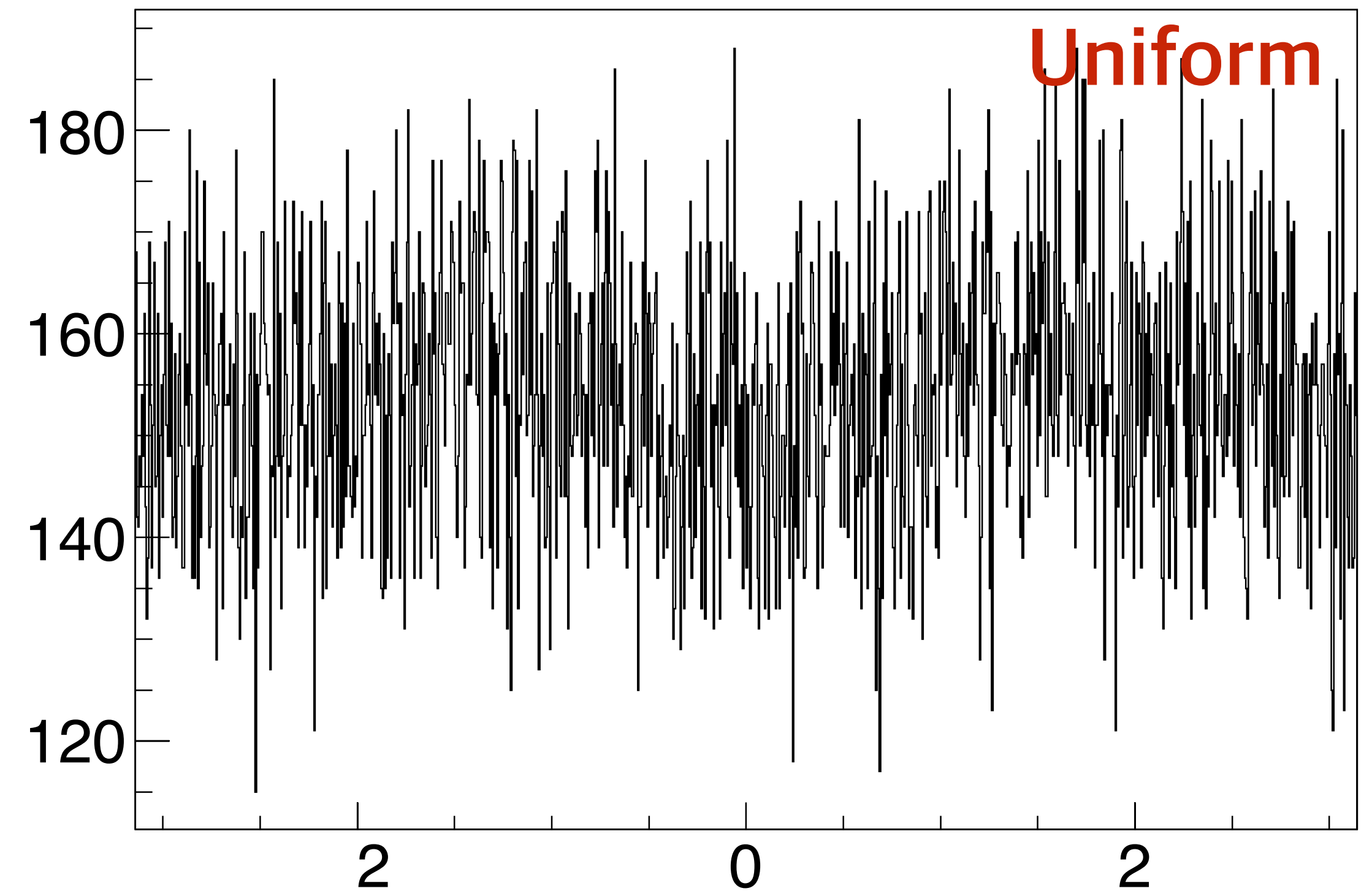
Both are UNIFORM, now.

Fixed Distribution of Neutral Pion

Pi0 Cos Theta



Pi0 Phi



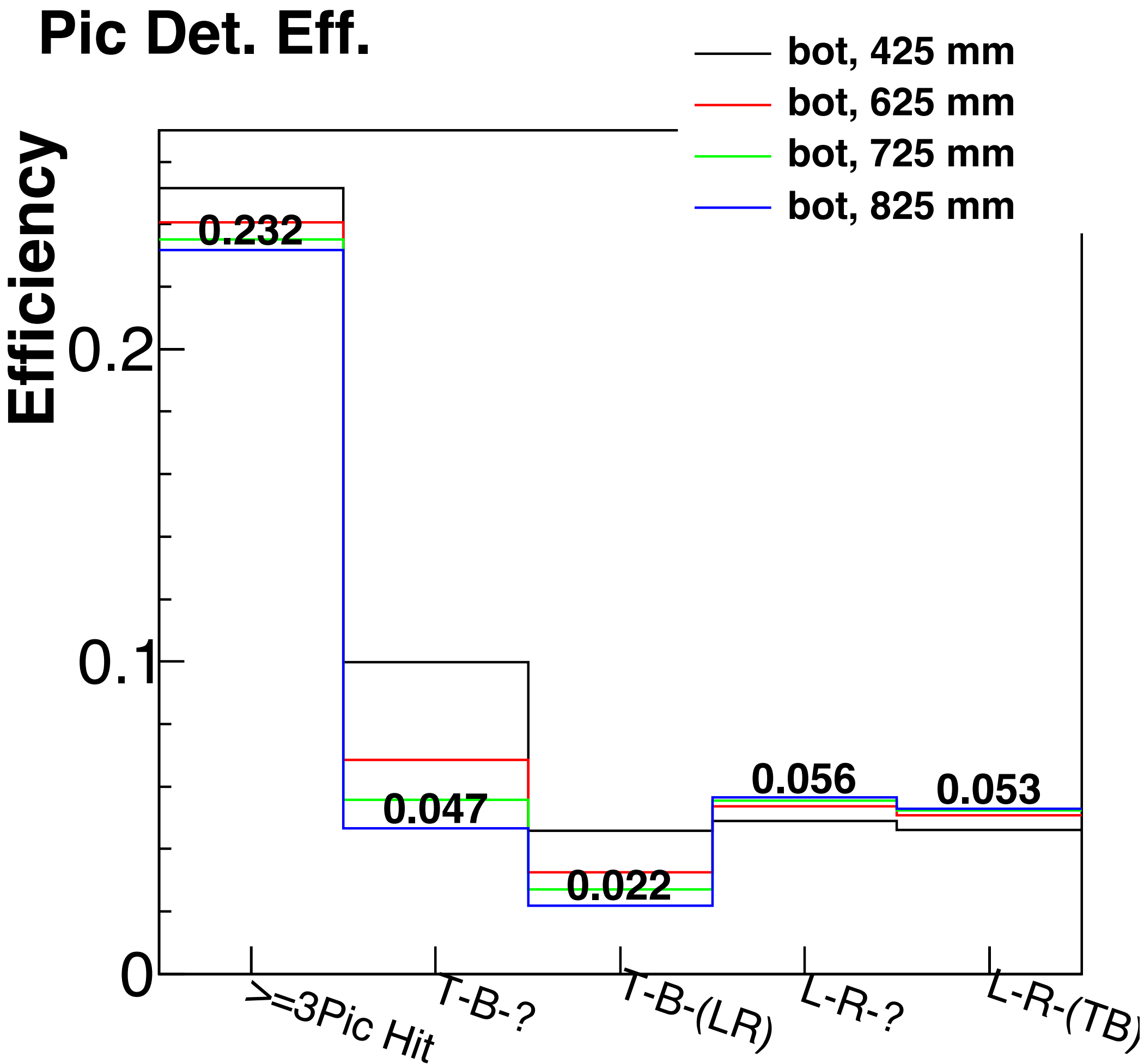
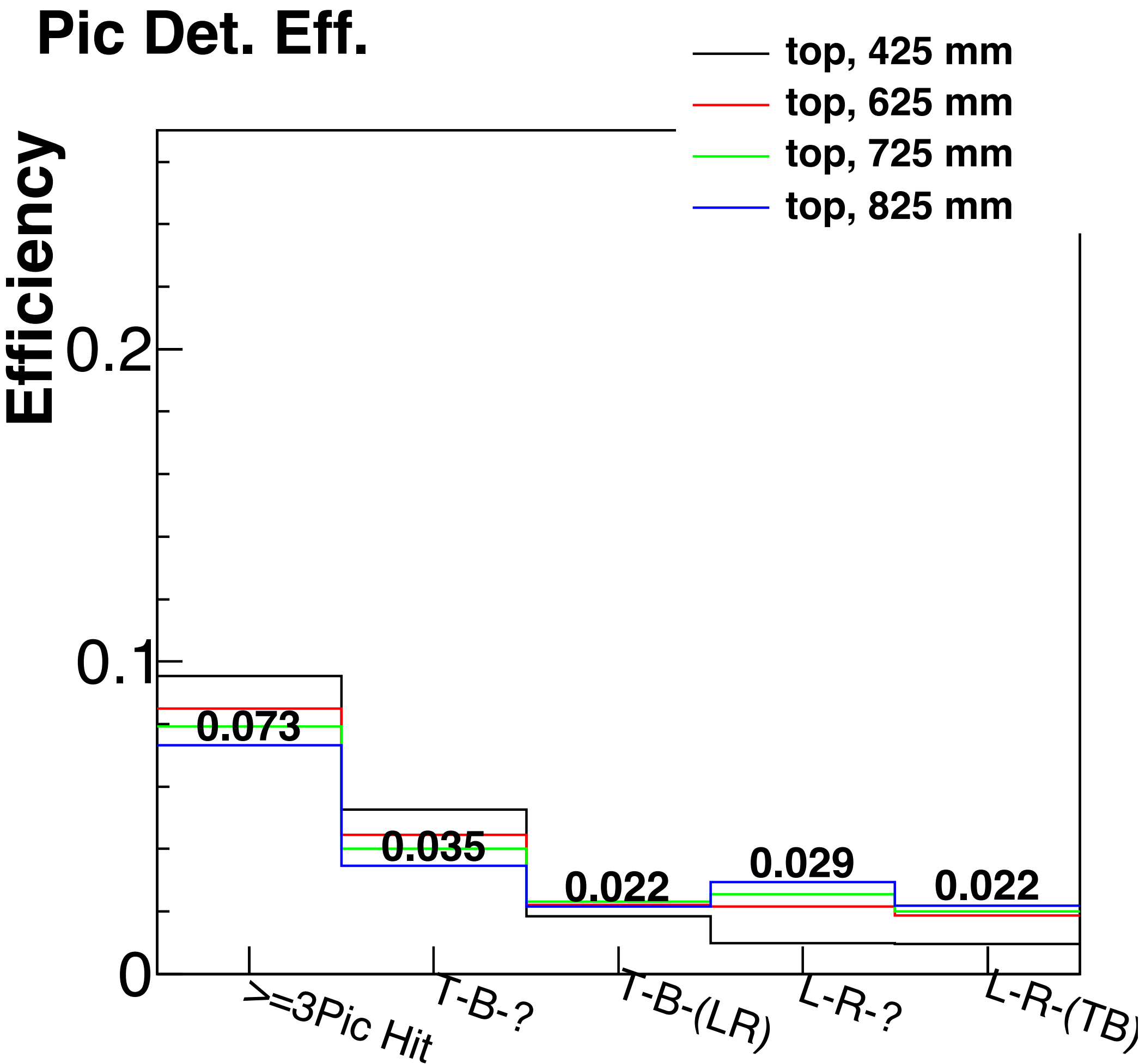
Both are UNIFORM, now.

Problem and Solution in Simulation

- Problem: Huge change of detection efficiency after modifying geometry (esp. change of the orientation: $Y \rightarrow Z$)
- Origin: **Anisotropic distribution of secondary pions**
- Solution: Add some lines in the GEANT4 source codes (a part of Parton-String model), to **RANDOMLY rotate the system** after annihilation.

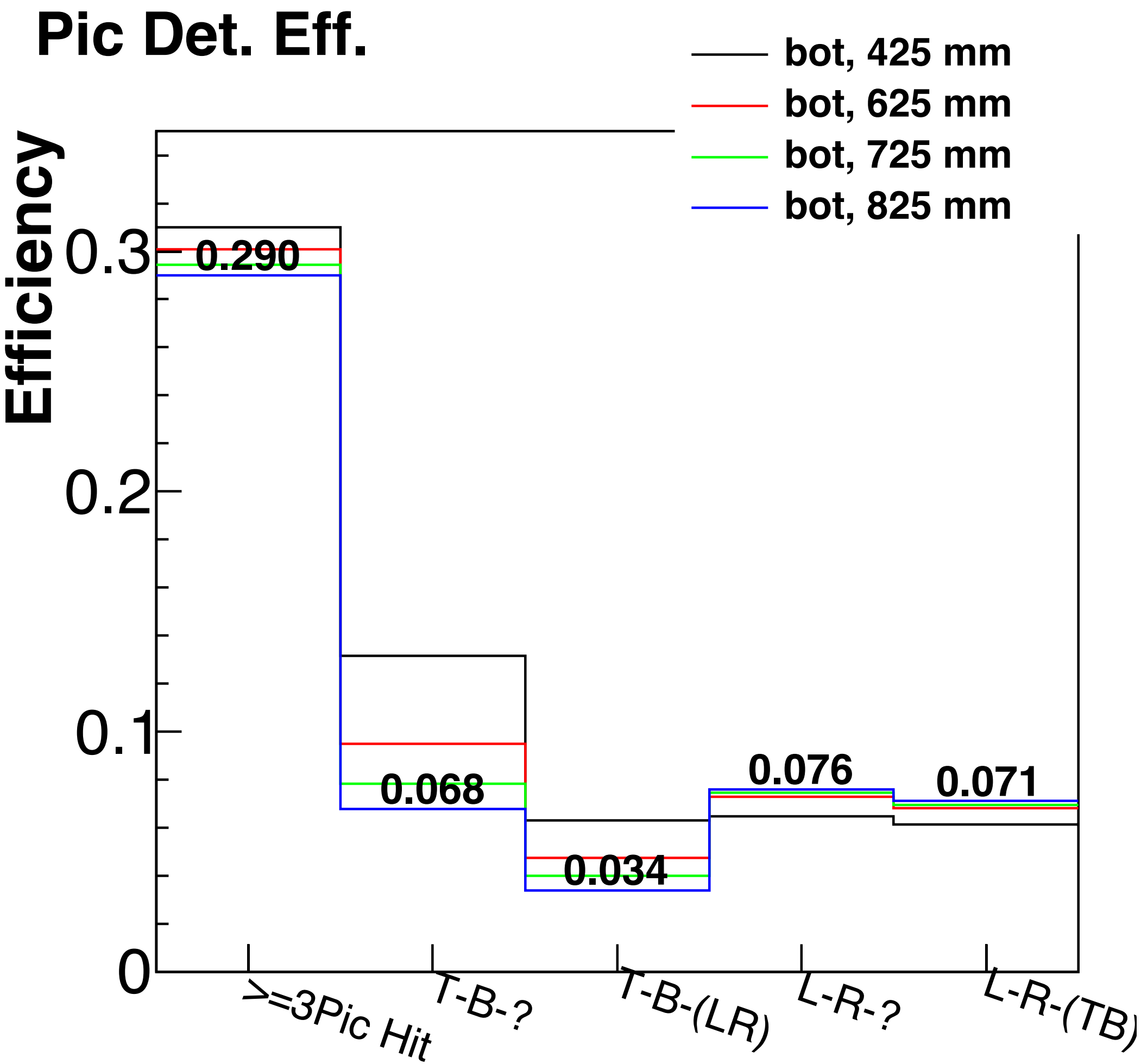
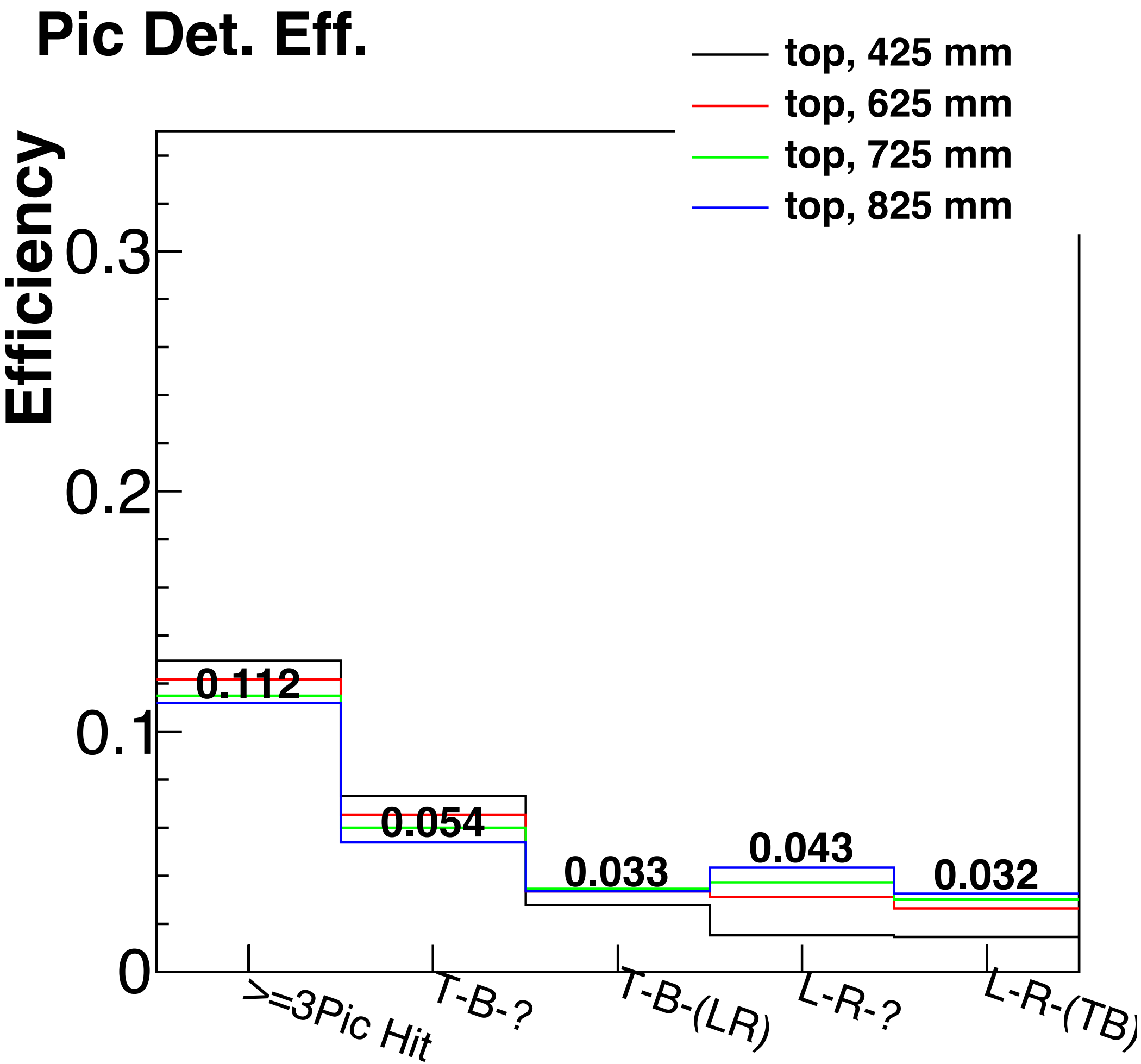
Plastic Length = 170 cm

Previous 3-Pic Detection Efficiency (Vertical = Y axis)



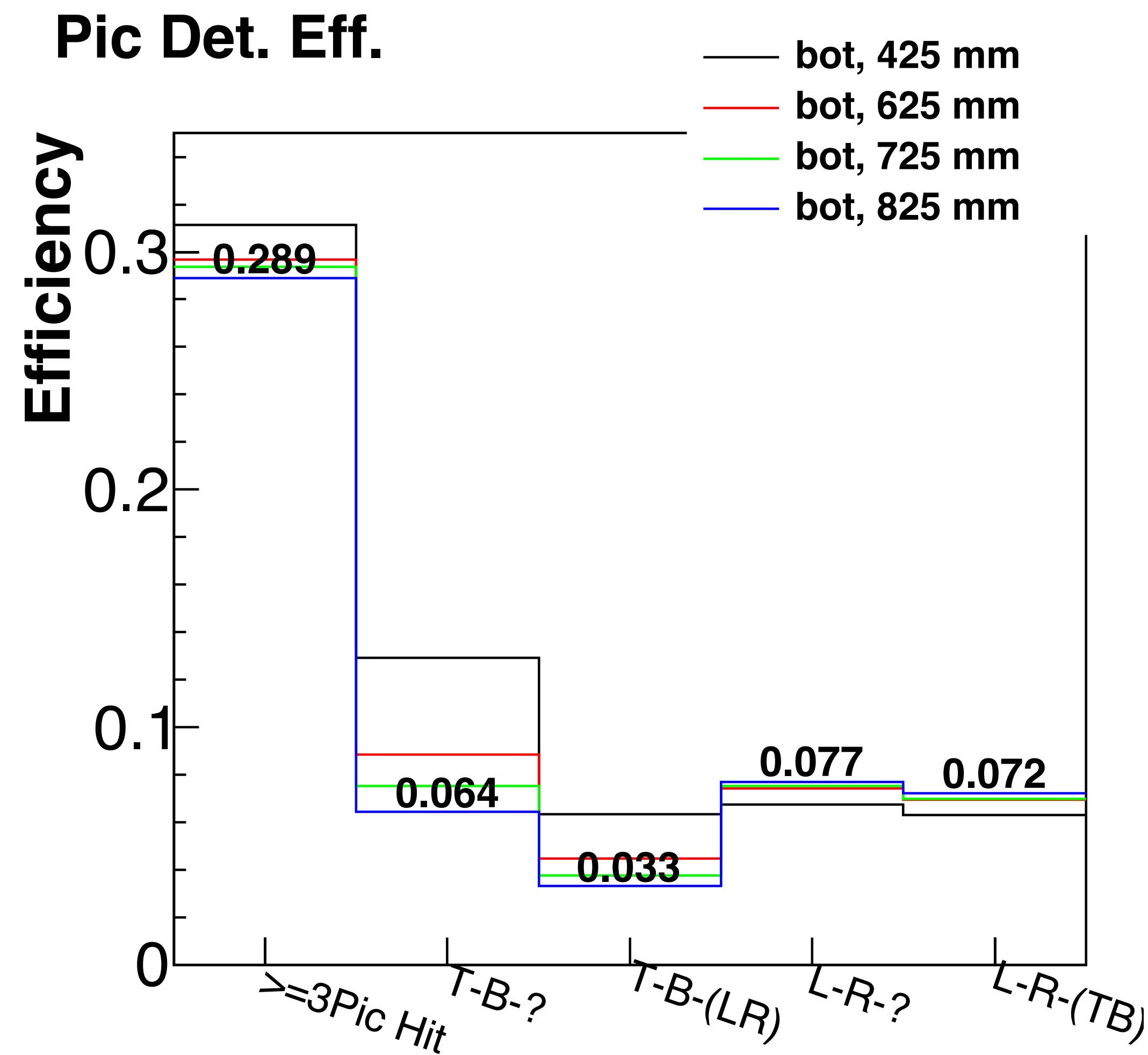
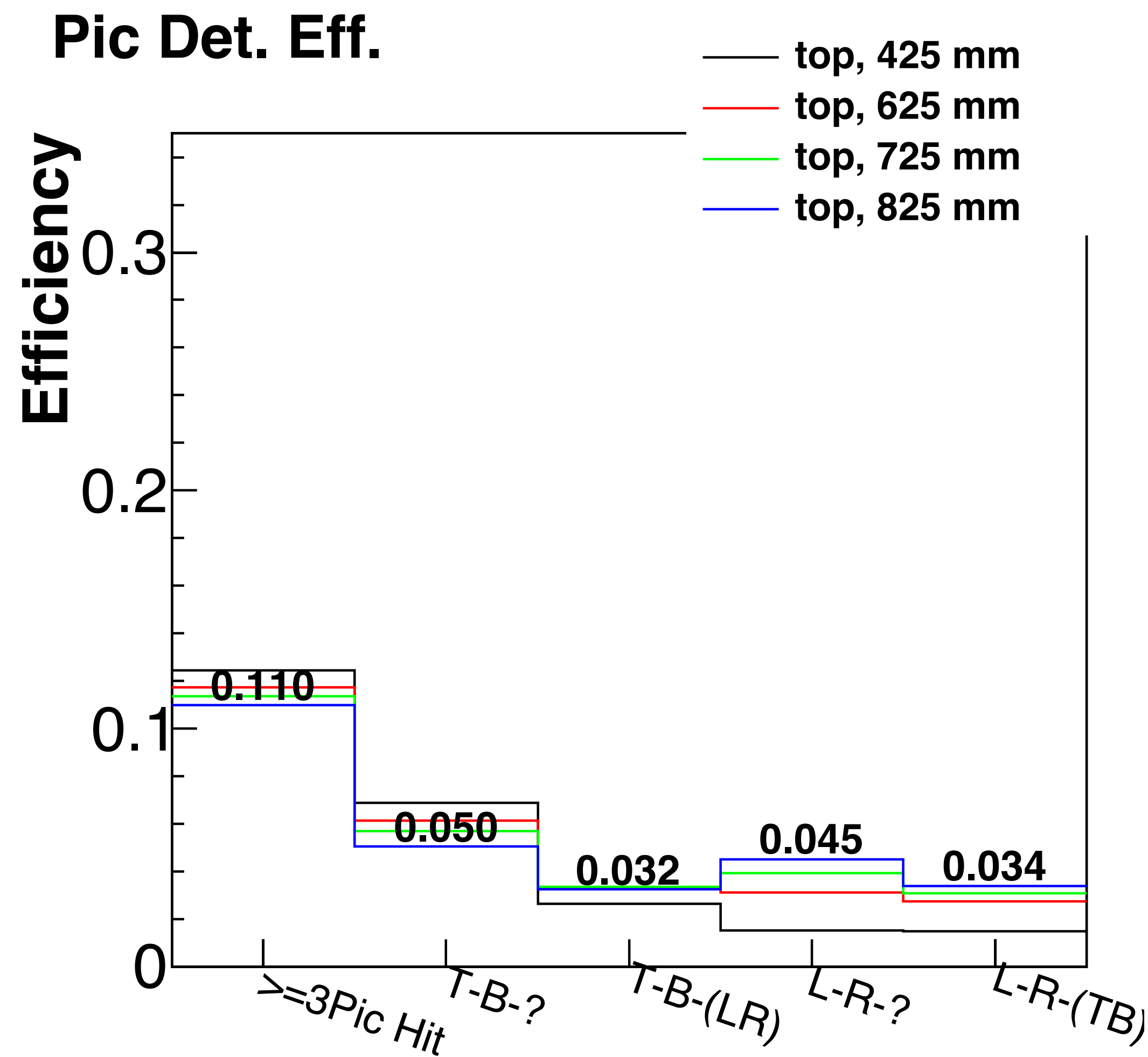
Plastic Length = 170 cm

Fixed 3-Pic Detection Efficiency (Vertical = Y axis)



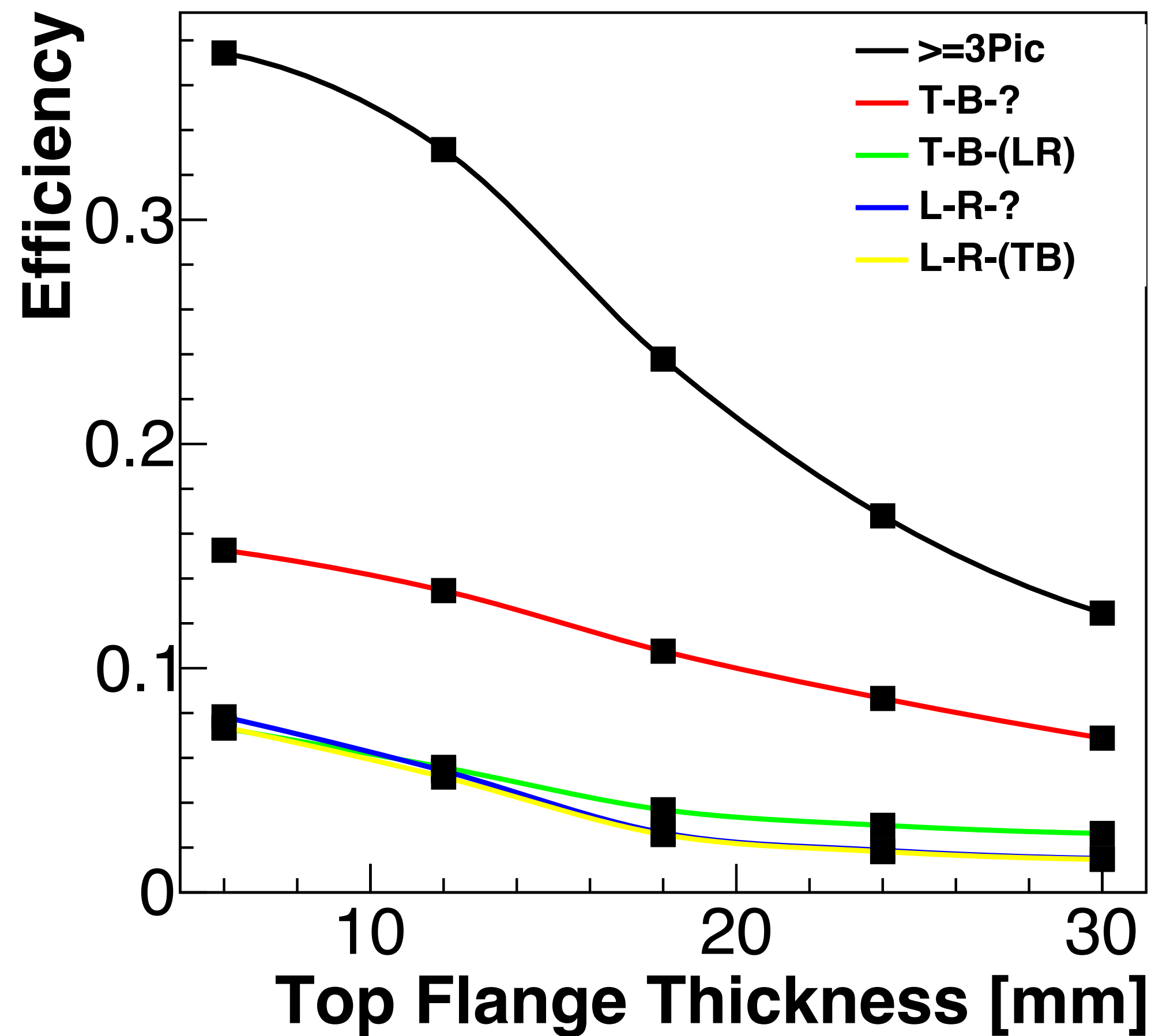
Plastic Length = 170 cm

Fixed 3-Pic Detection Efficiency (Vertical = Z axis)

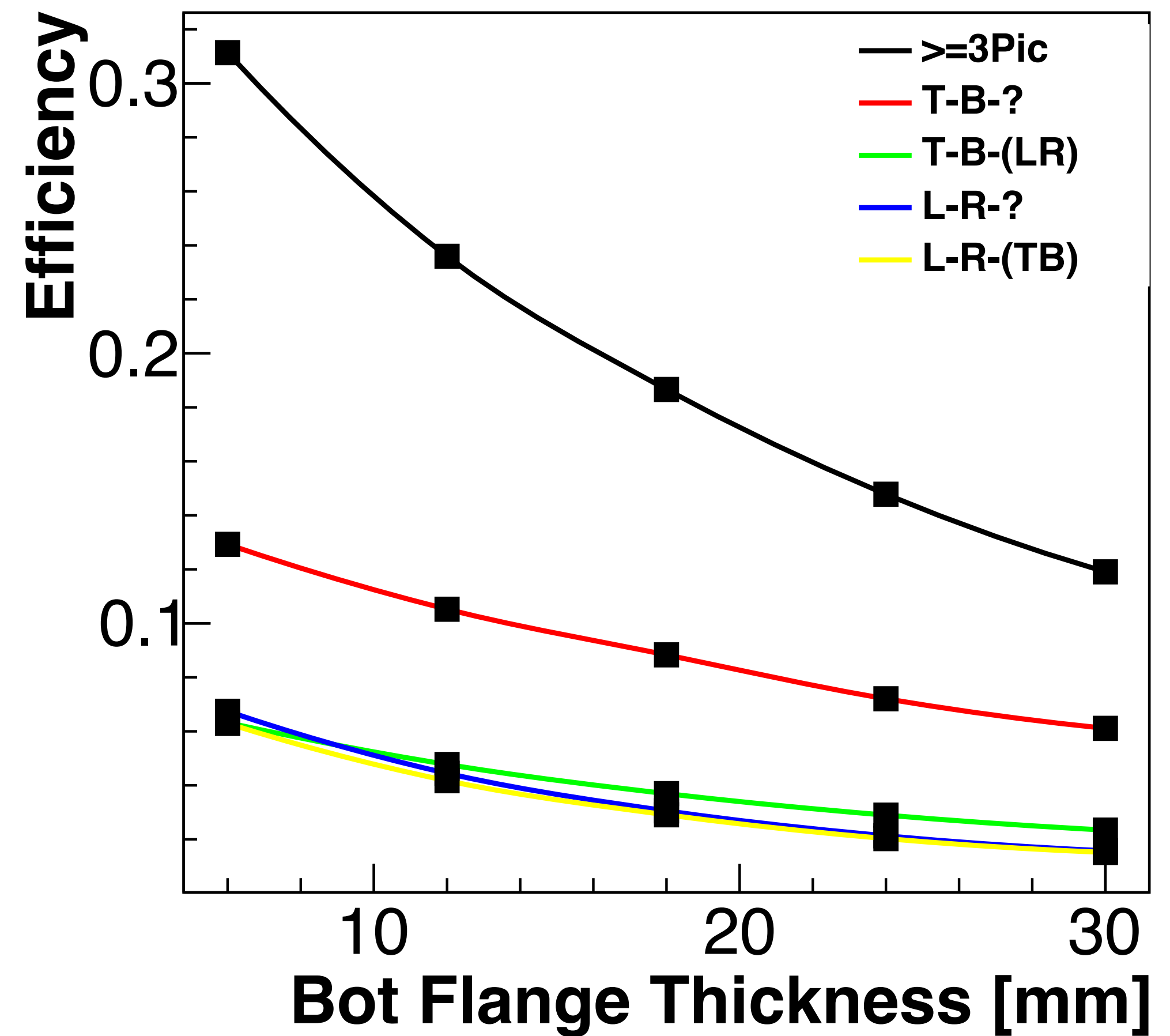


Thickness Dependence

Pic Eff. (Top/425)

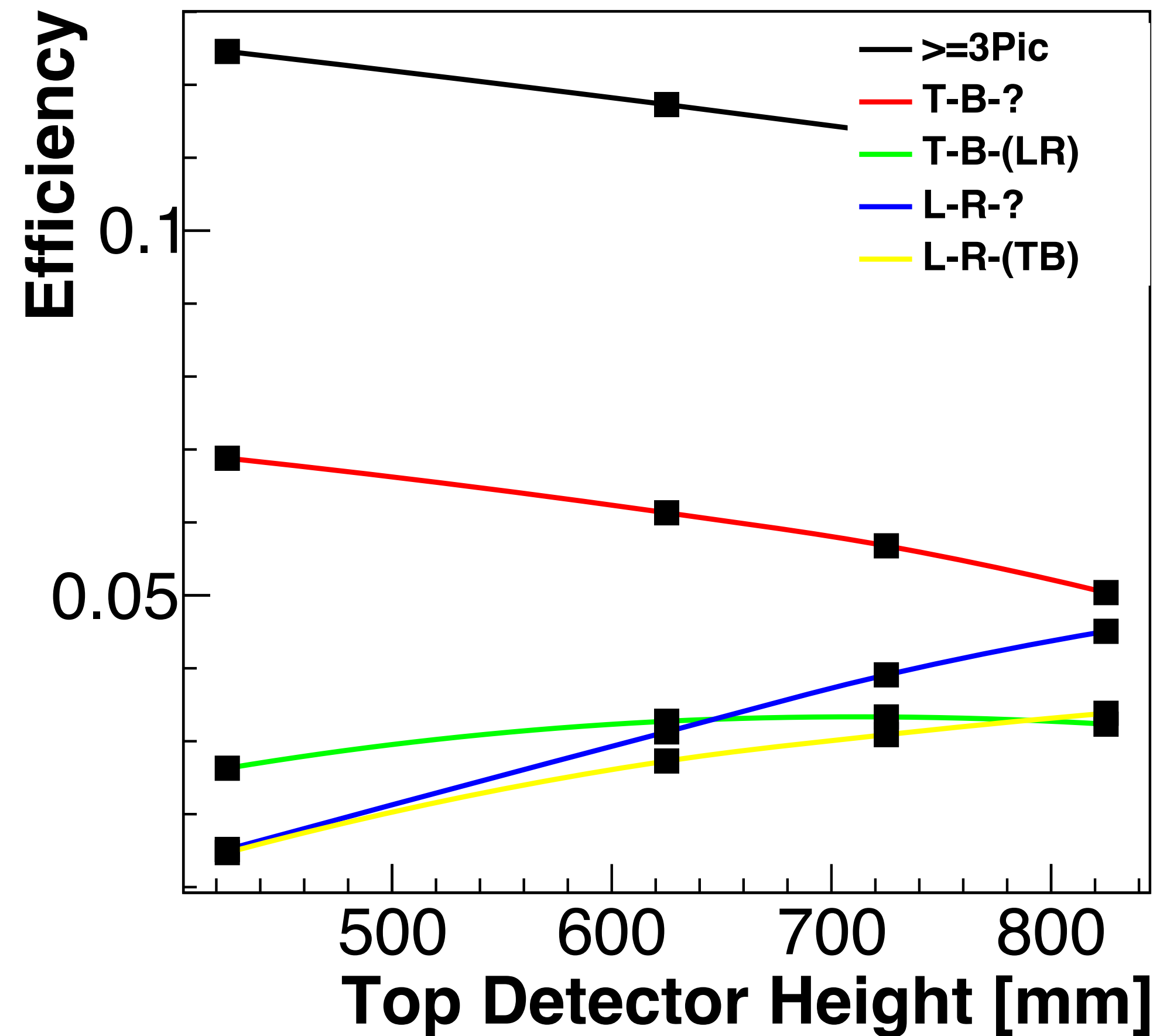


Pic Eff. (Bot/425)

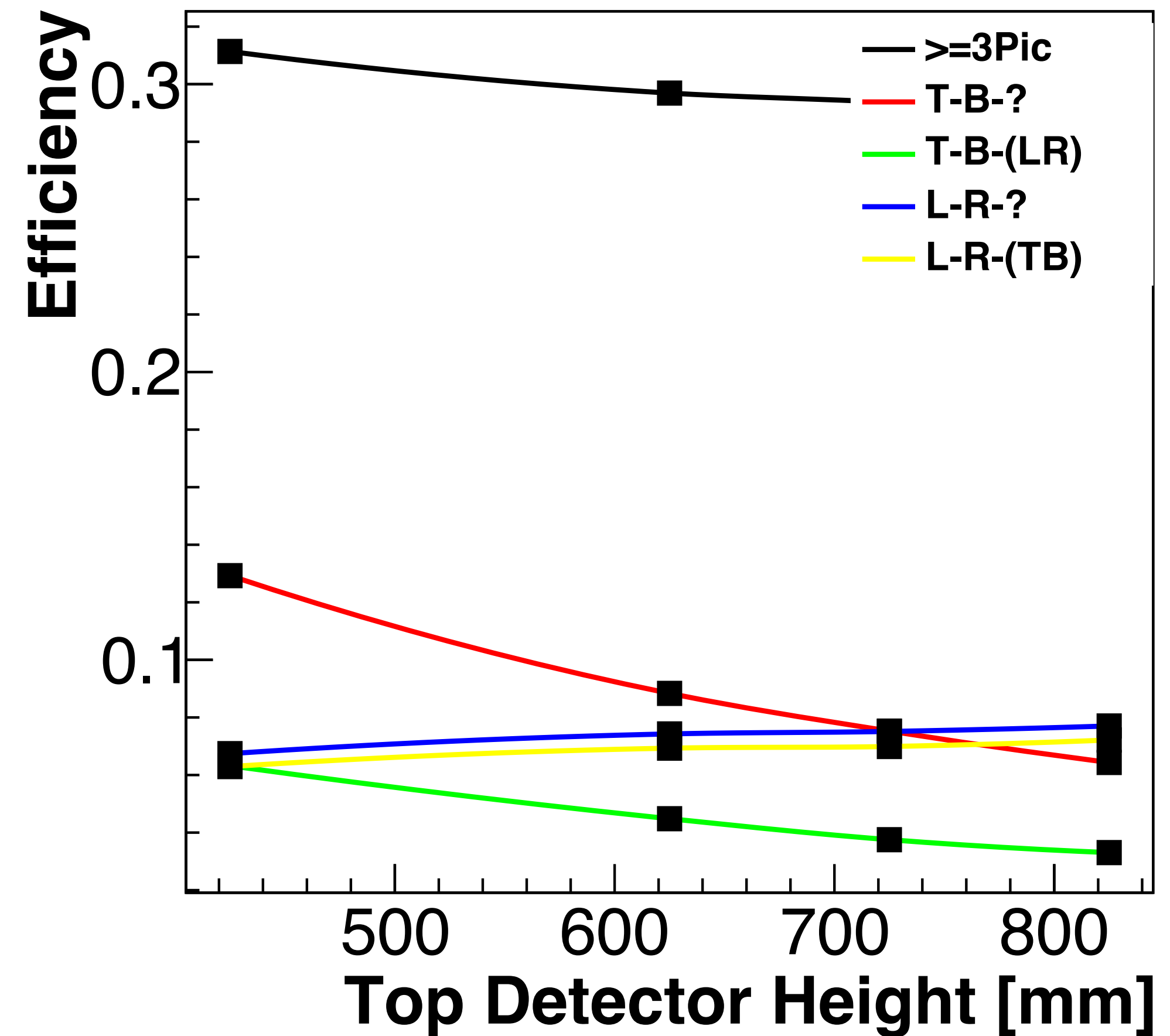


Top Detector Height Dependence

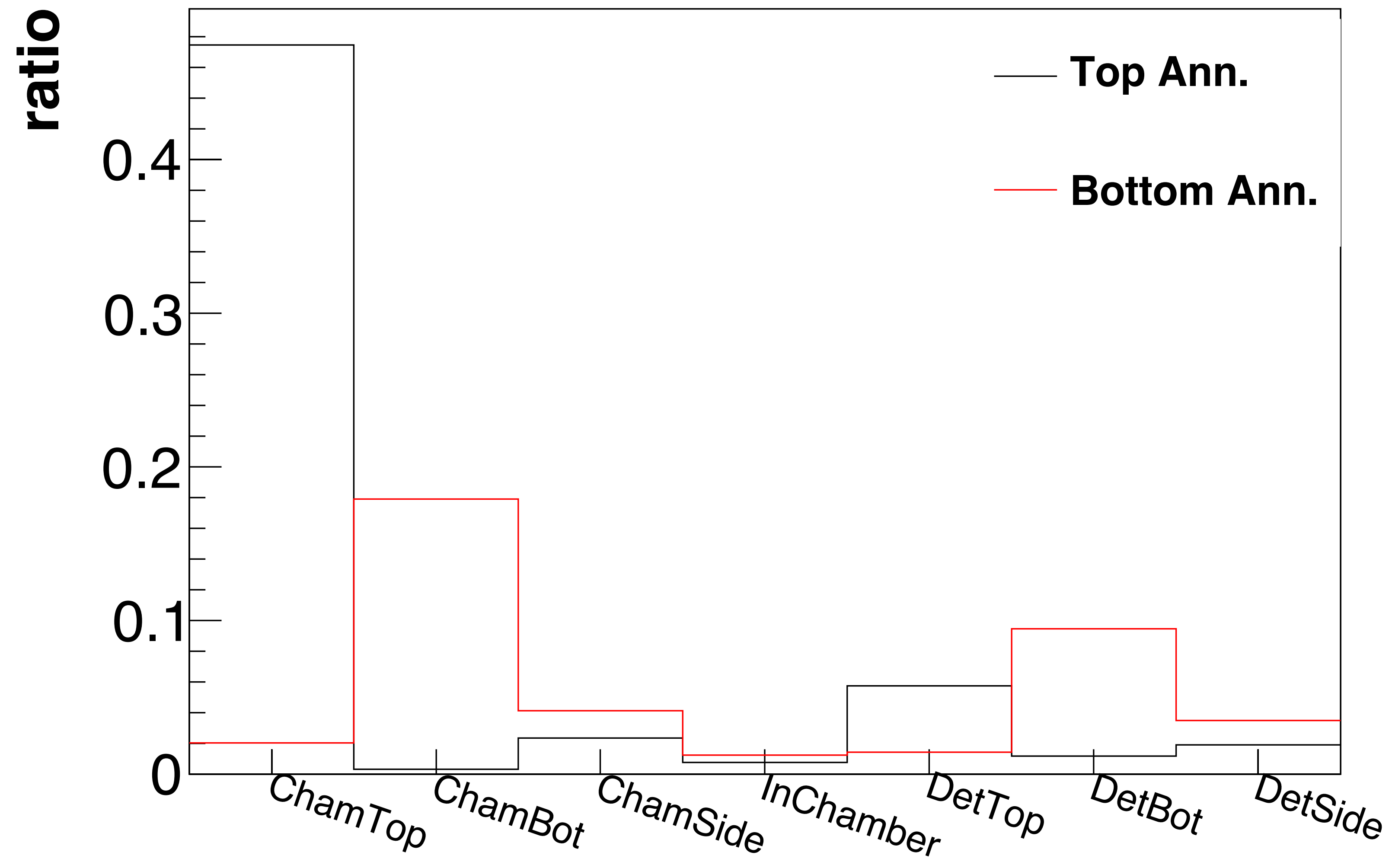
Pic Eff. (top)



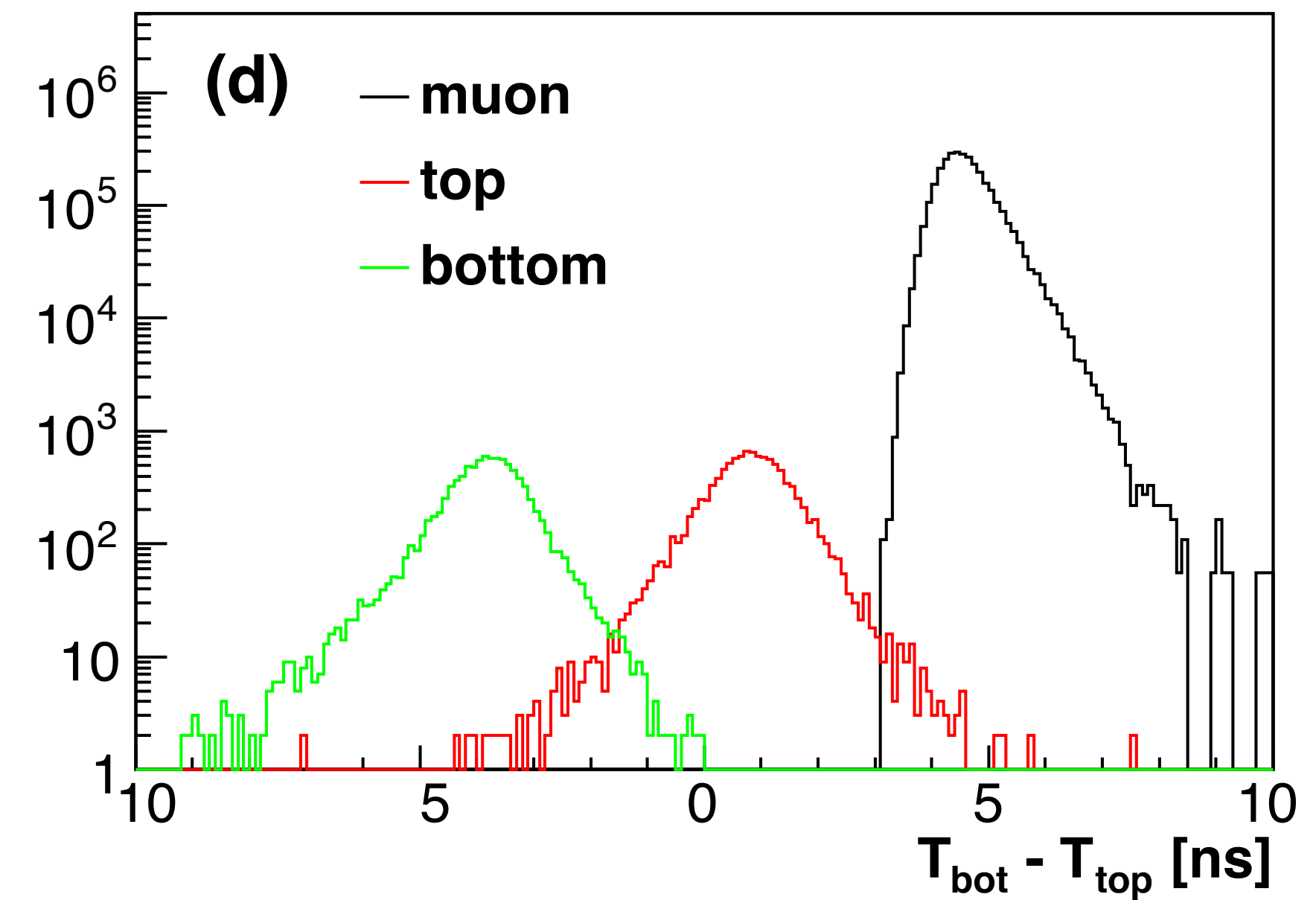
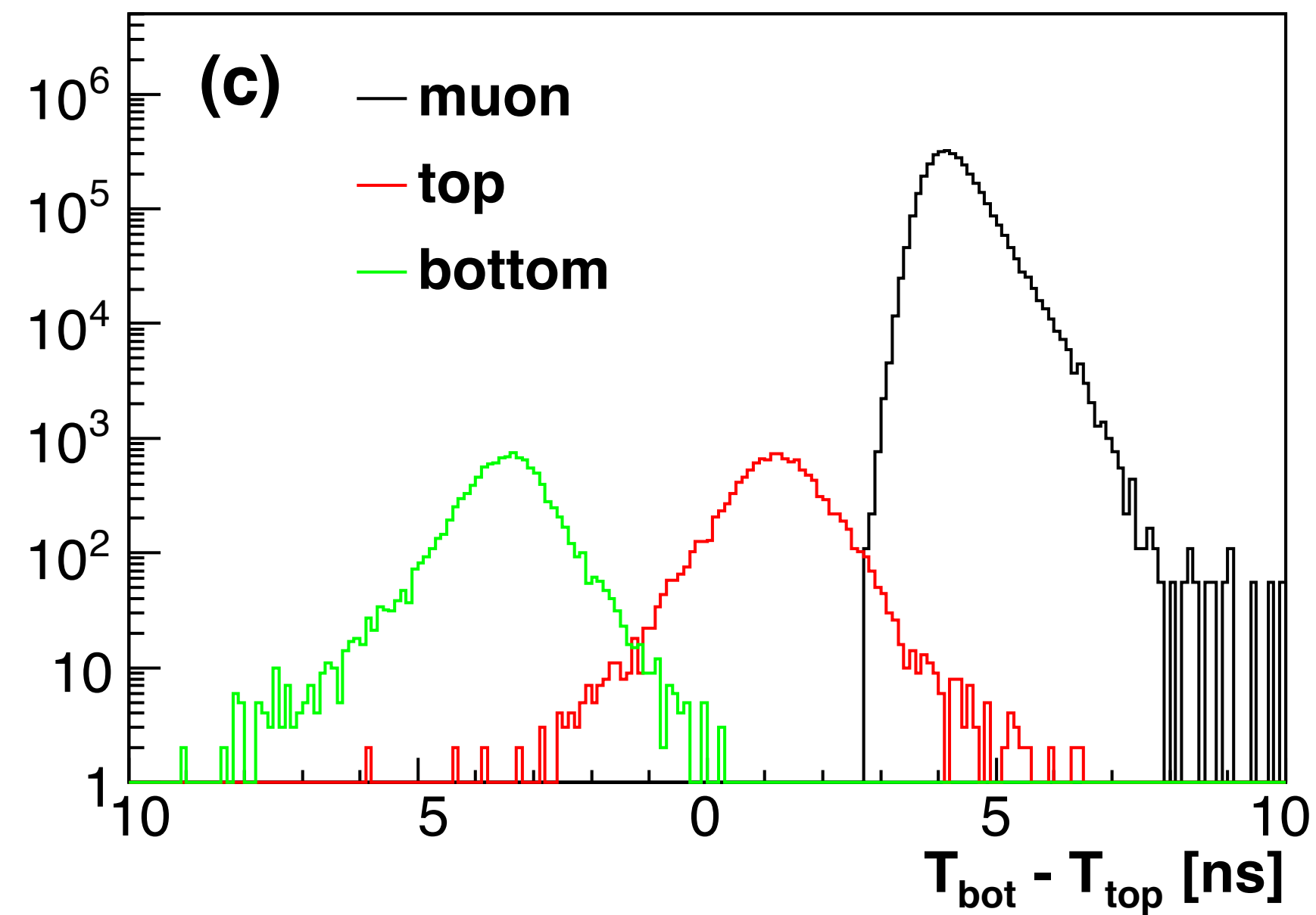
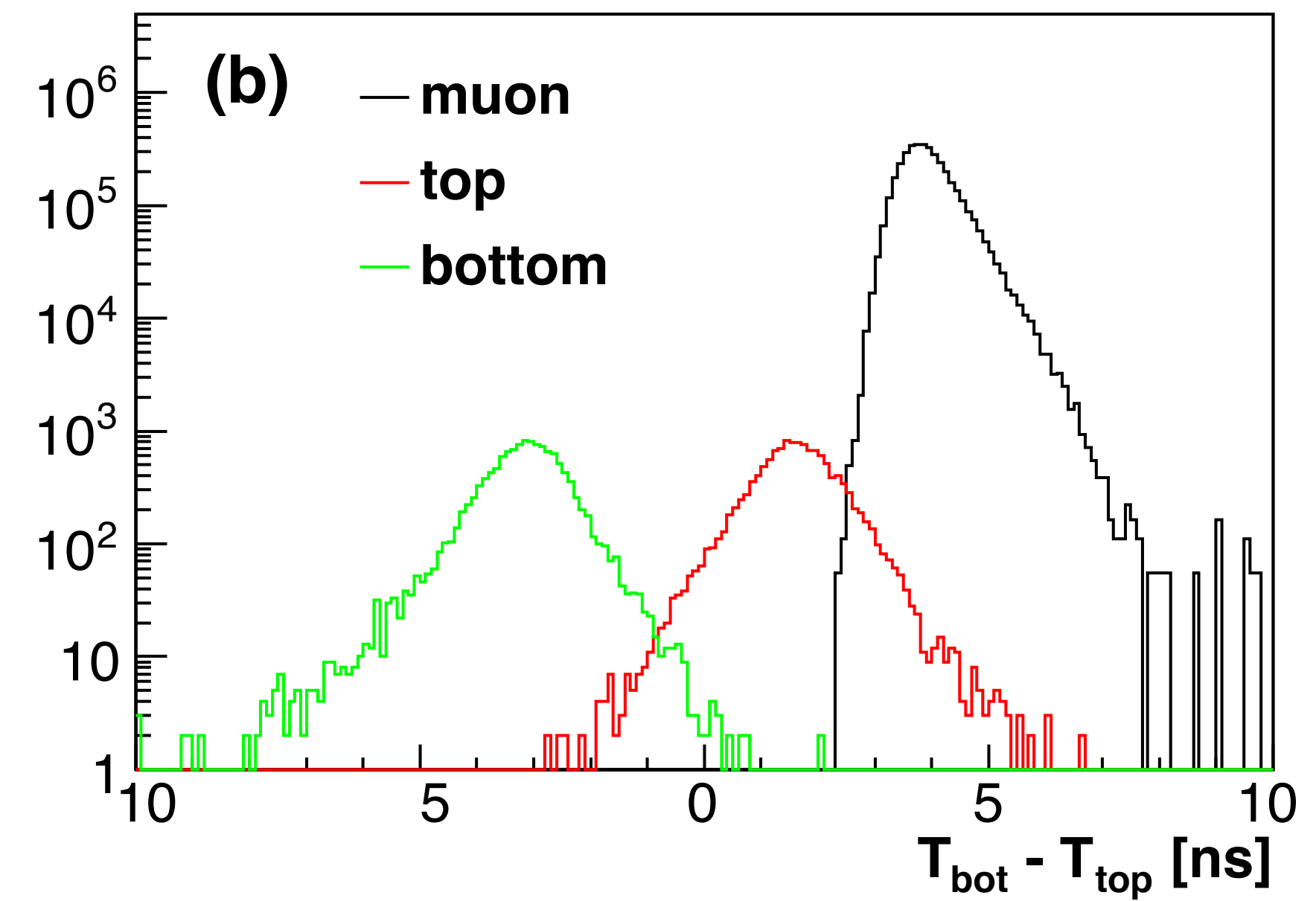
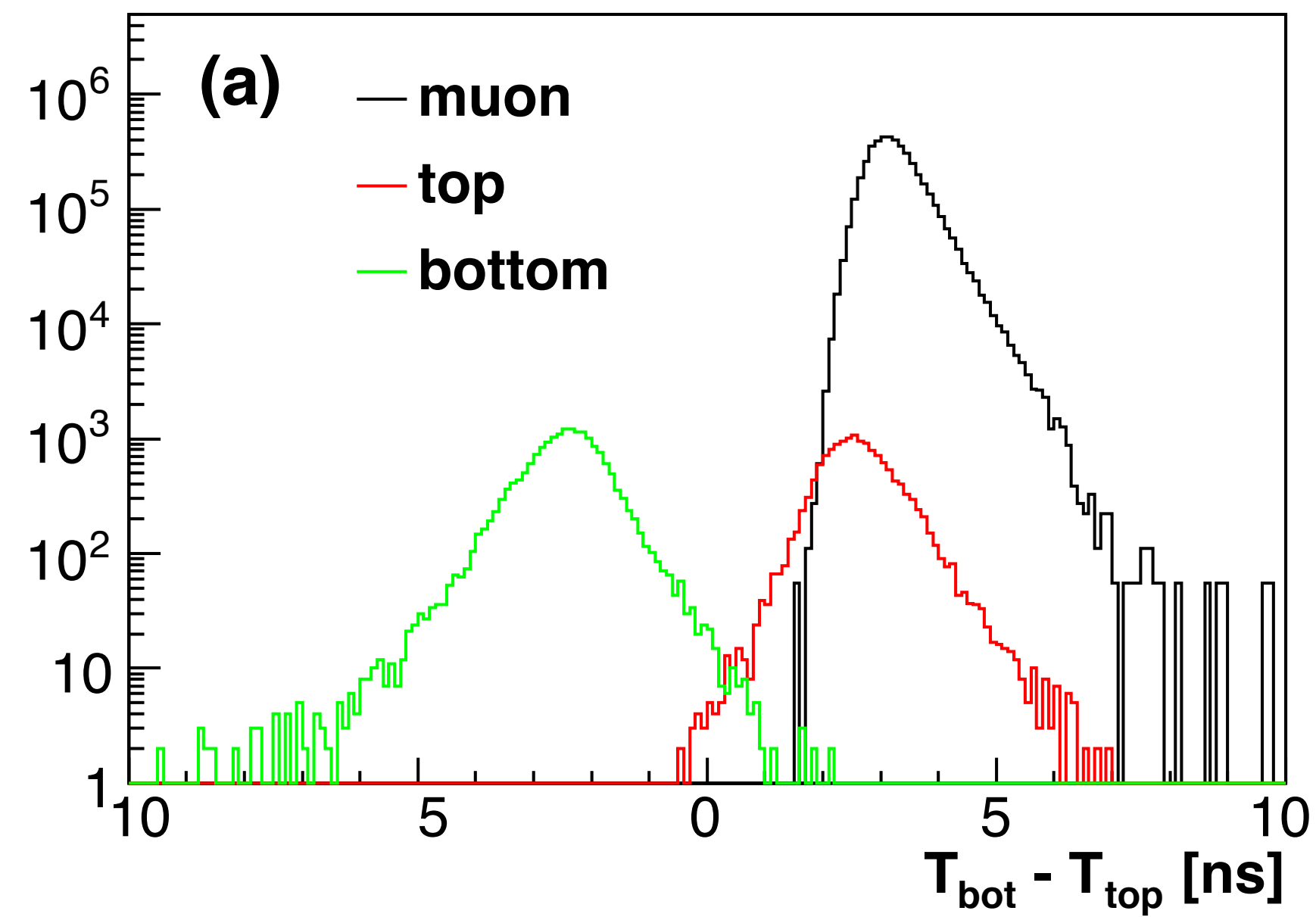
Pic Eff. (bot)



Charged Pion Stopping Place



dT of Pion / Cosmic Muon



dT of Charged Pion / Cosmic Muon

