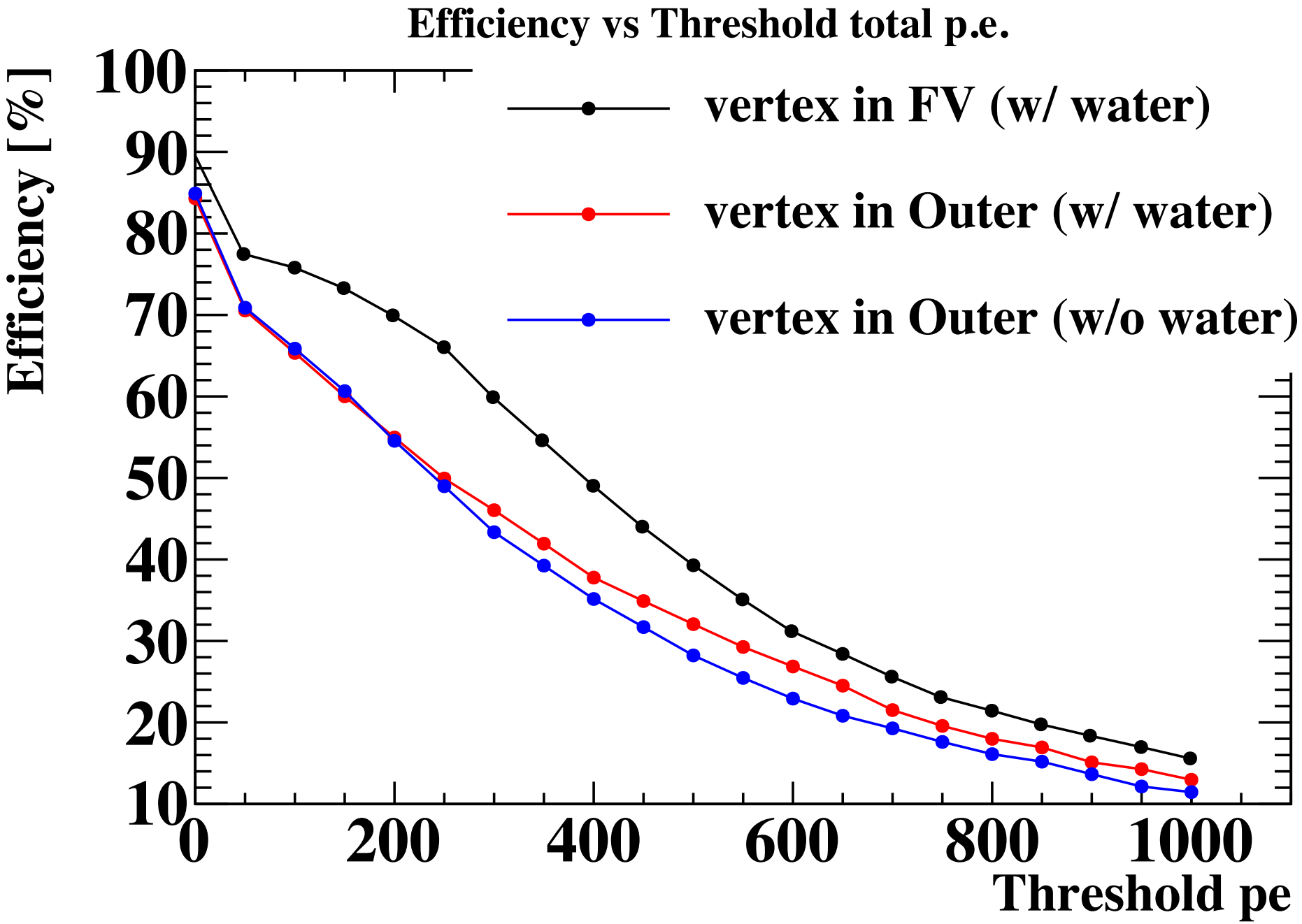
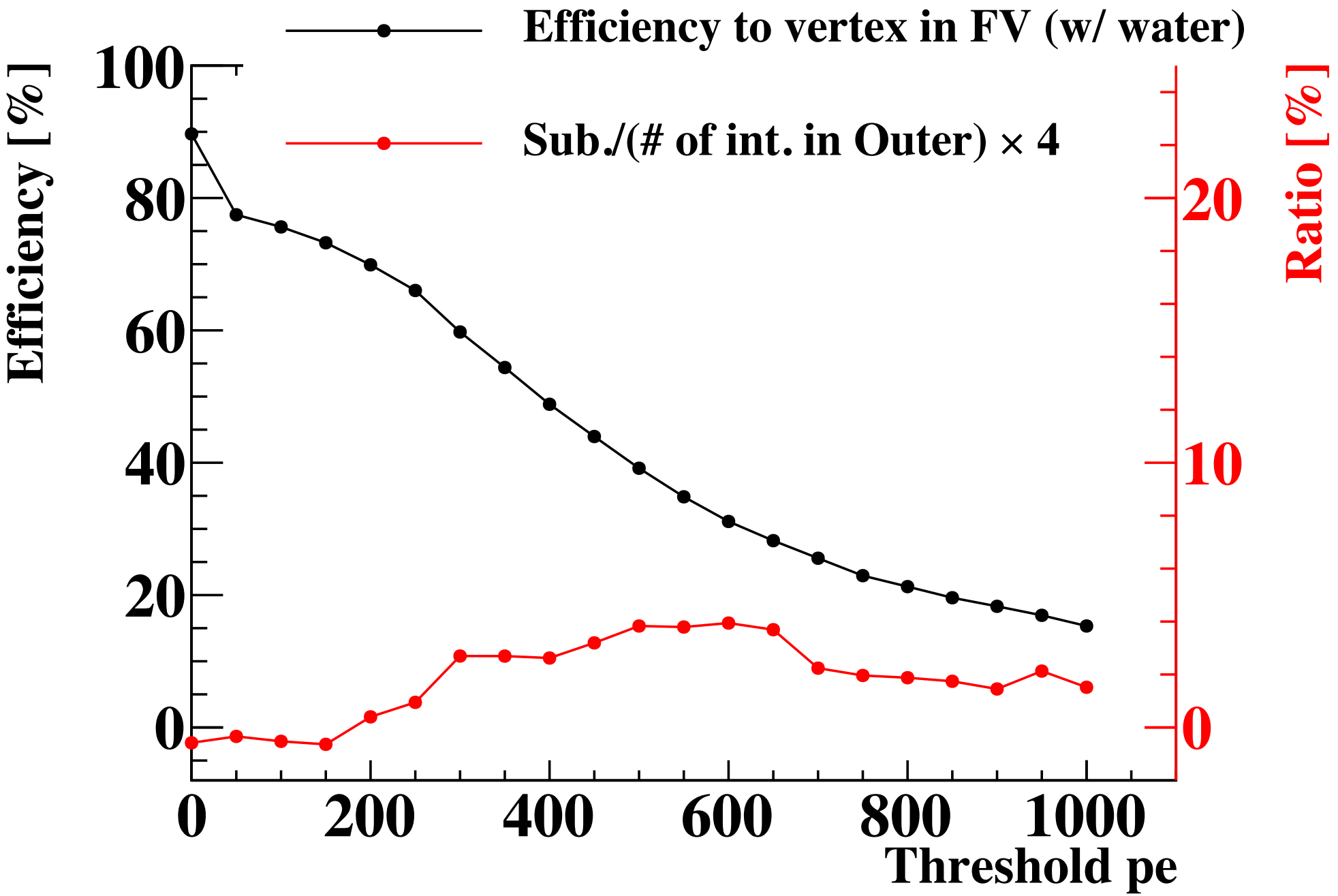
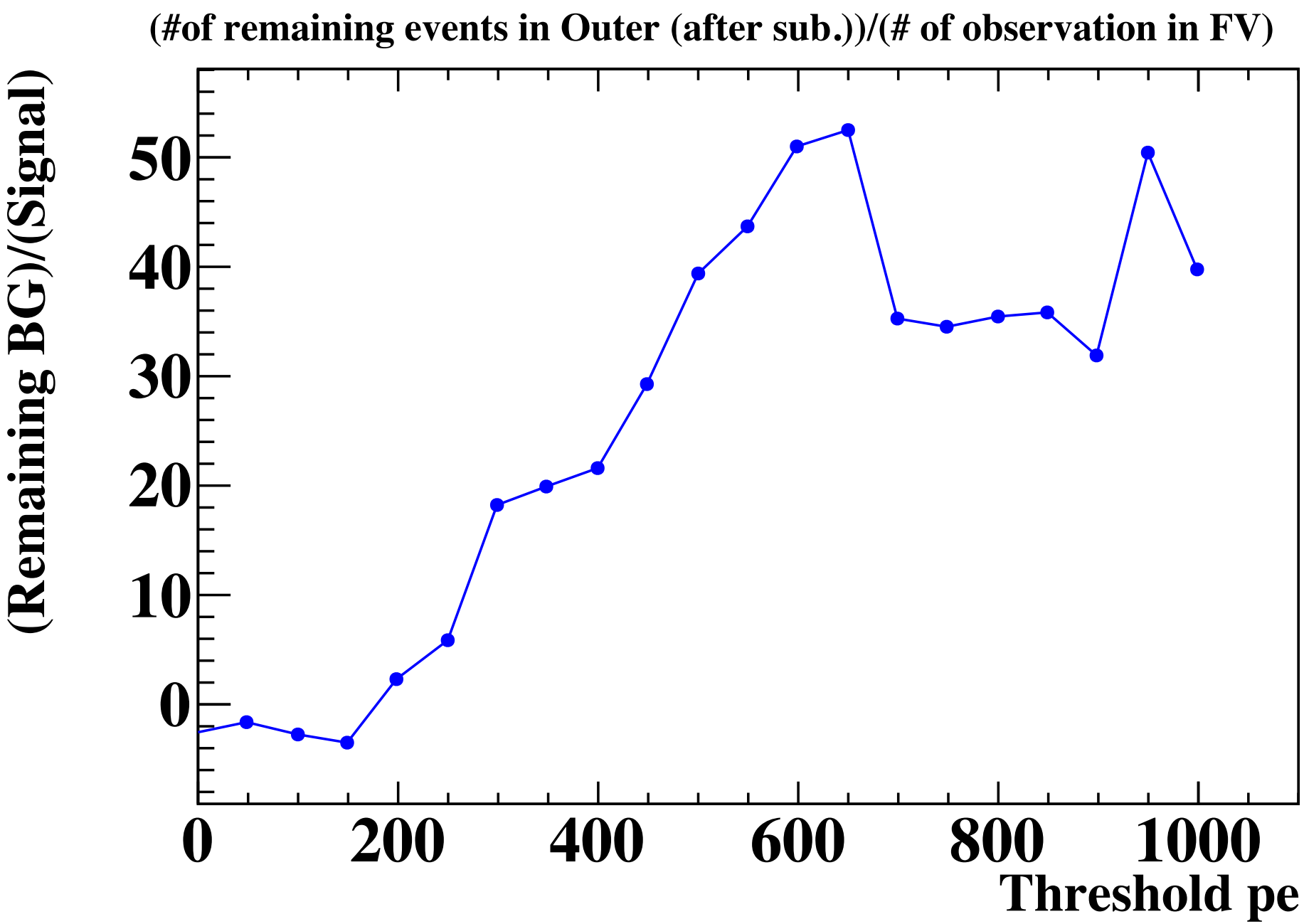
プロット修正

- 以前お見せしたプロットのにバグ発見...
- Efficiencyの縦軸が僅かに全体的に上下します。
- が、結論が変わるほど致命的なものではありませんでした。


Efficiency vs Threshold total p.e.
Efficiency [%]
100
90
80
70
60
50
40
30
20
10
0
200
400
600
800
1000
Threshold pe
vertex in FV (w/ water)
vertex in Outer (w/ water)
vertex in Outer (w/o water)


Efficiency to vertex in FV (w/ water)
Sub./(# of int. in Outer) × 4
Efficiency [%]
Ratio [%]
100
80
60
40
20
0
20
10
0
0
200
400
600
800
1000
Threshold pe


(#of remaining events in Outer (after sub.))/(# of observation in FV)
(Remaining BG)/(Signal)
50
40
30
20
10
0
0
200
400
600
800
1000
Threshold pe

One more things…

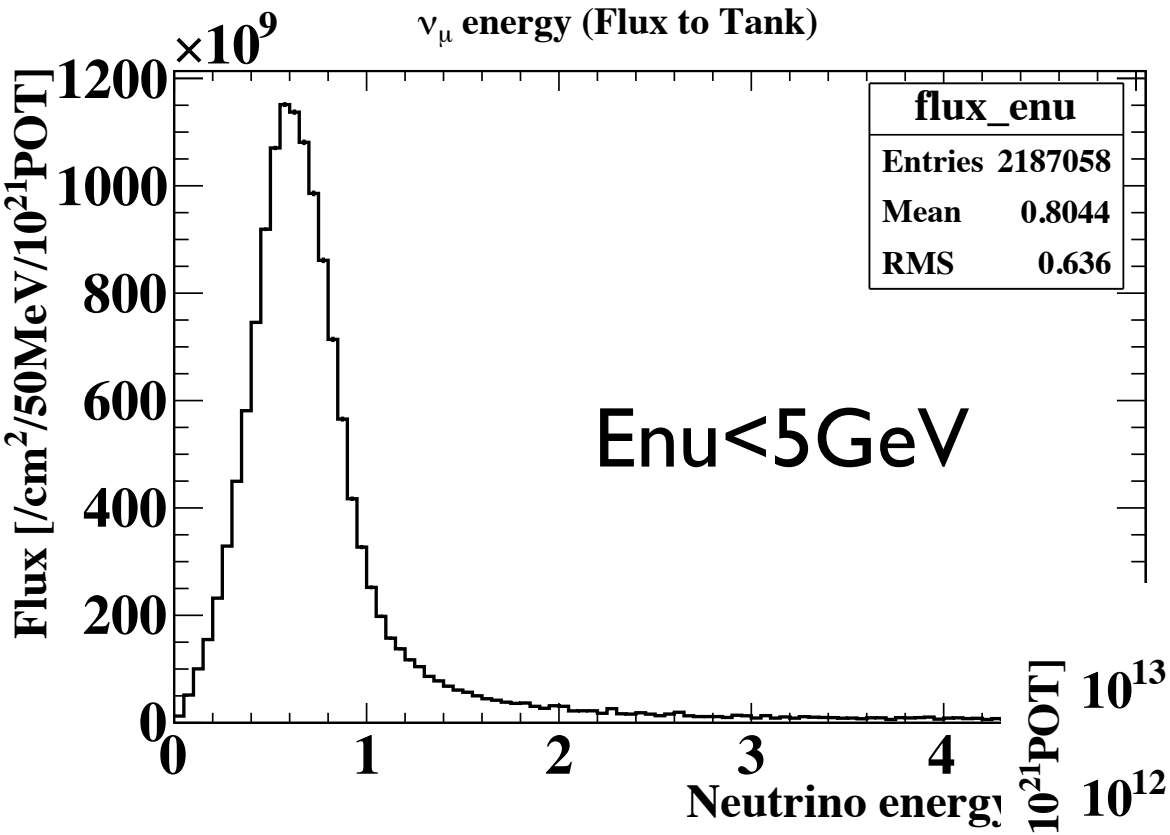
Mizuche MC
P-theta of primary production π+,K+

A.Murakami

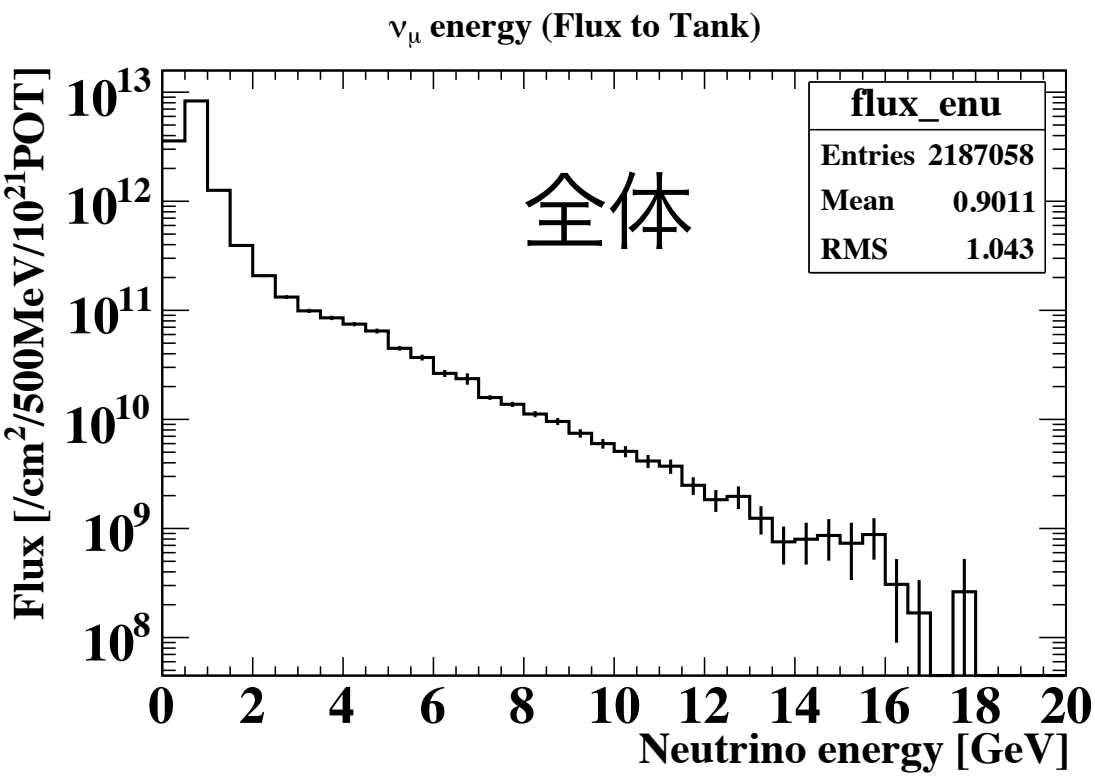
MC data

- FLux: Jnubeam 10c (GCALOR)
  - ND10 : means Mizuche real-place
  - ND10 setting of Jnbueam is according to Ichikawa-san's Excel file. (Area of ND10 was defined to 140cm × 140cm. Radius of Tank is 70cm)
- Neutrino simulate by NEUT
- Use Efficiency (total p.e.>150) to neutrino interacted in FV
  - This is made from previous MC (Flux:ND%). So, Low stat...

νμ Flux energy @ND10



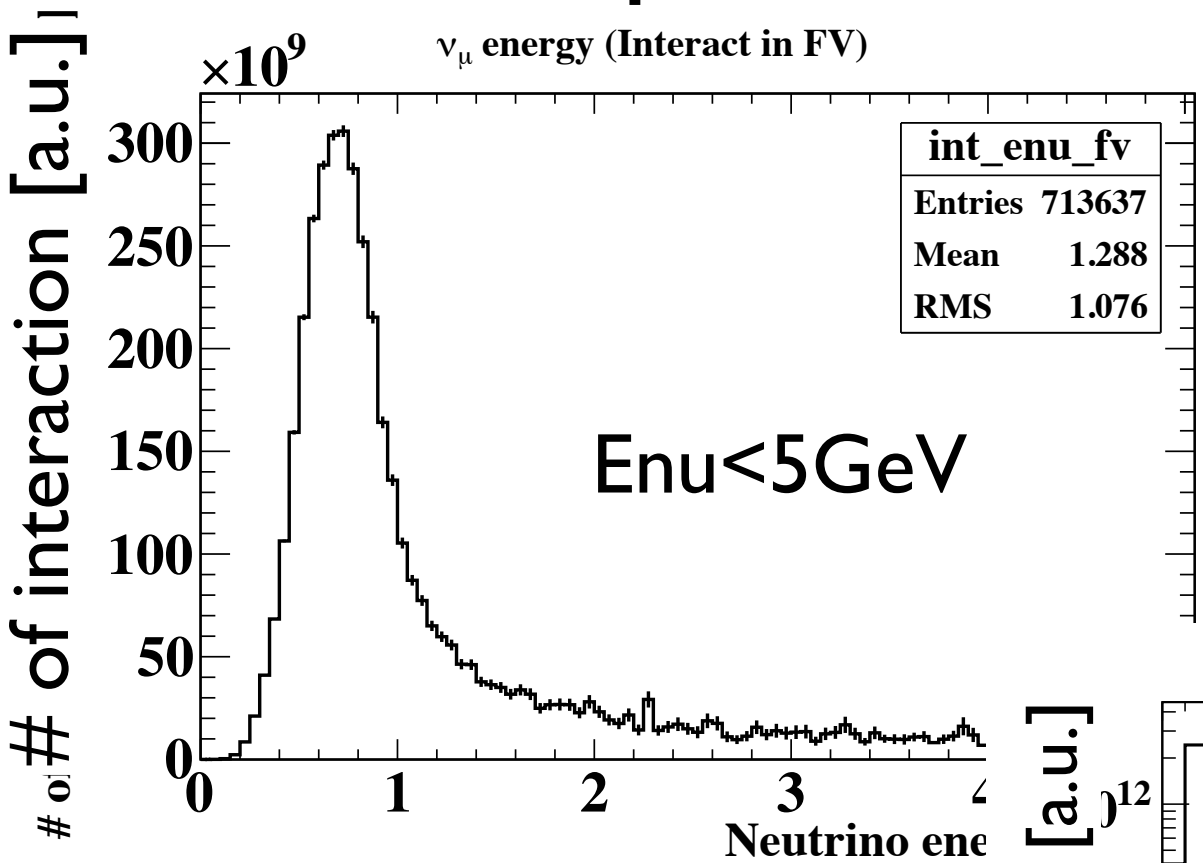
Enu<5GeV



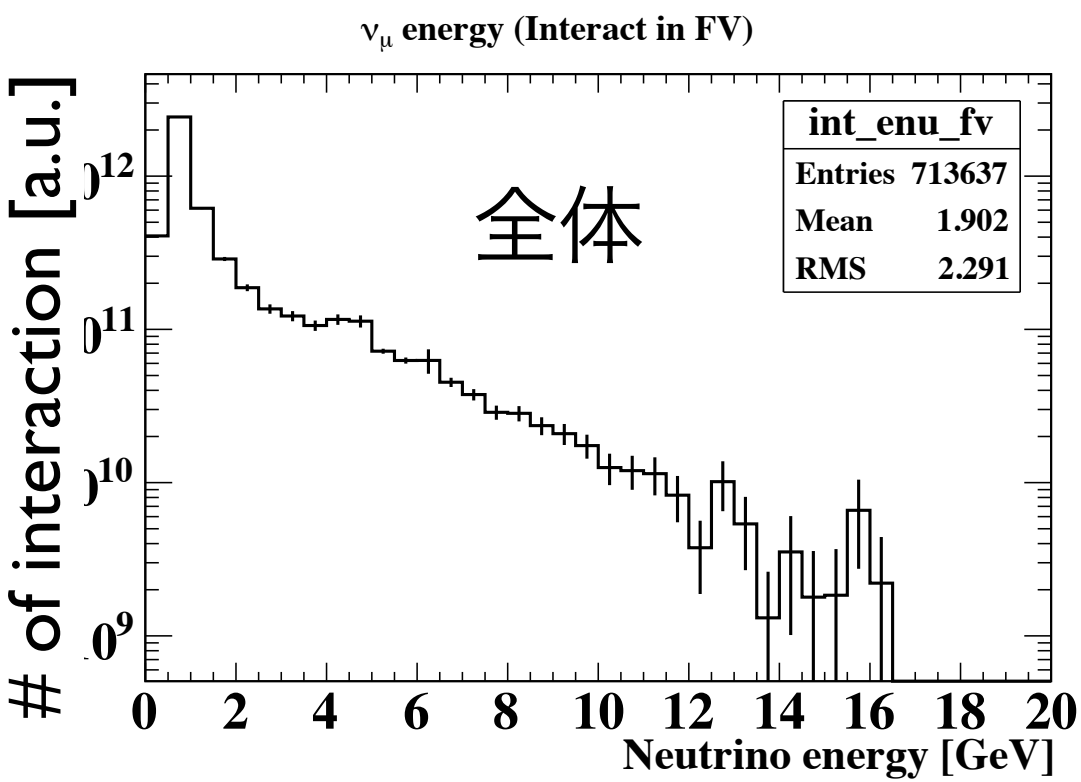
Φ(>5GeV)/Φ(全体)

~ 2%

νμ interacted in FV



Enu<5GeV

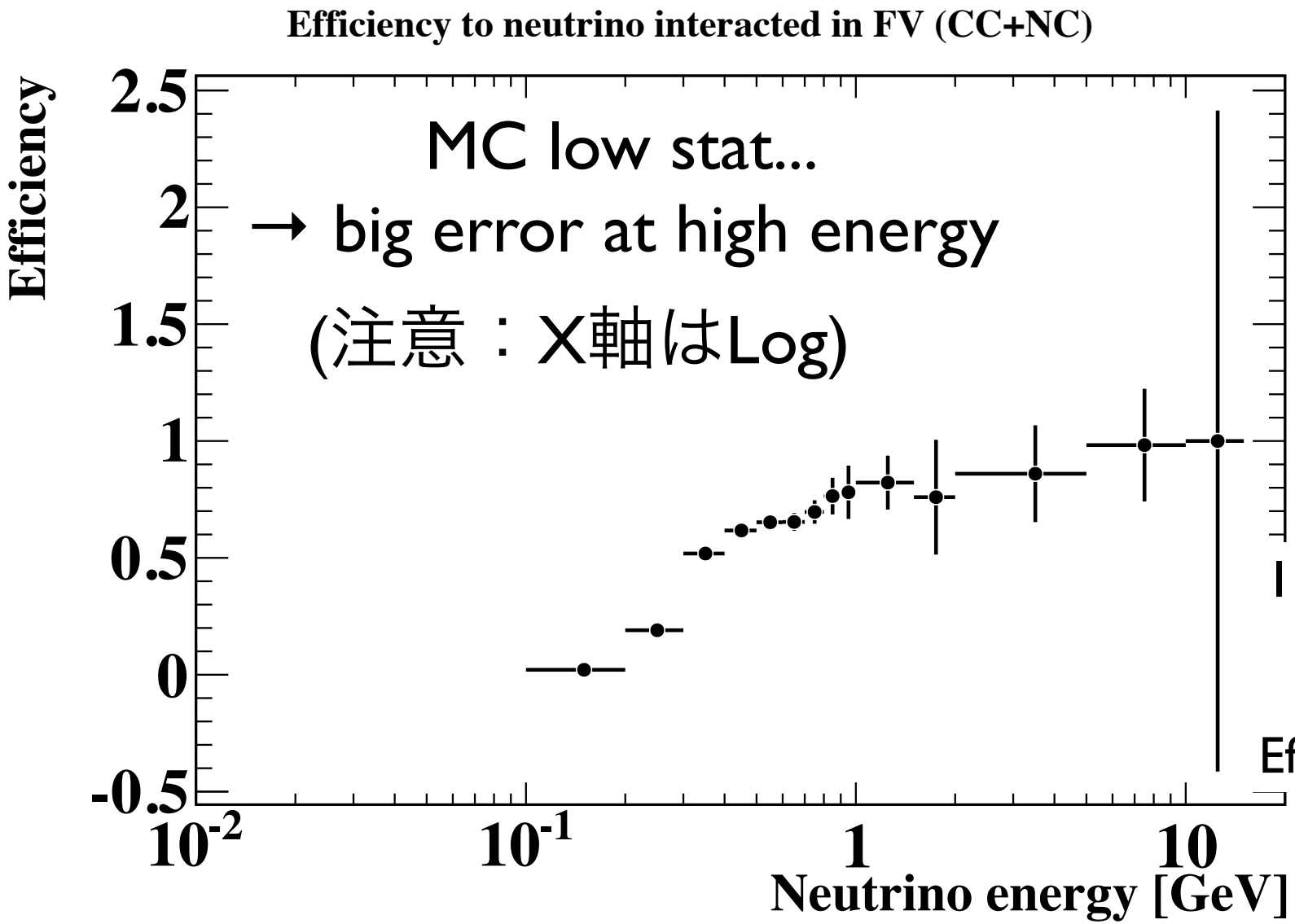


全体

Nint(>5GeV)/Nint(全体)

~ 10%

Efficiency to νμ interacted in FV



MC low stat...

→ big error at high energy

(注意：X軸はLog)

15GeVまでカバー

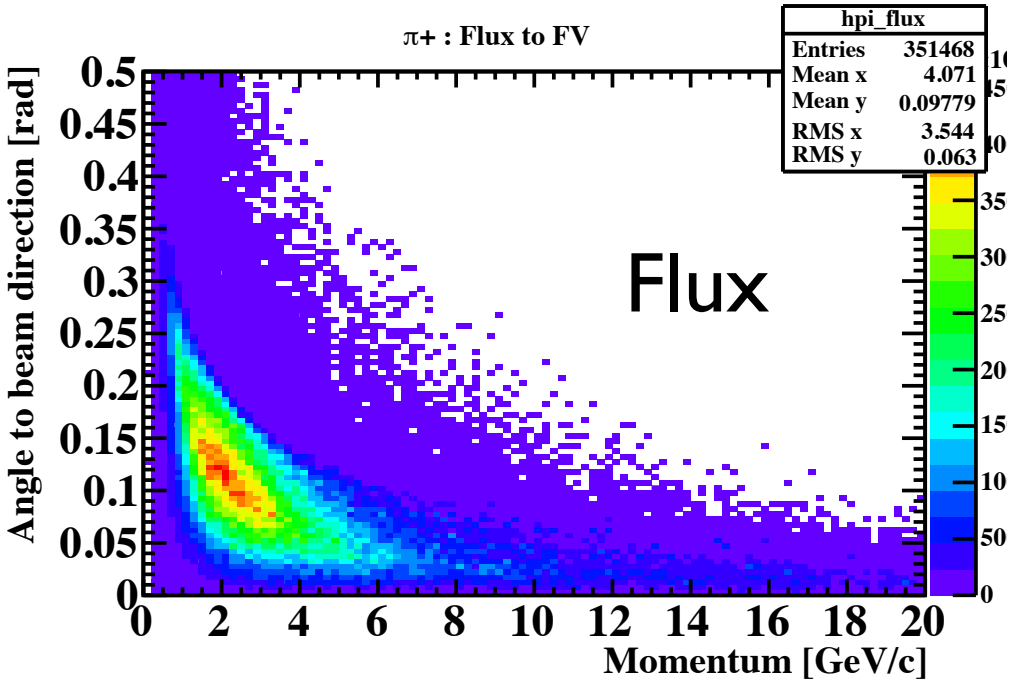
→ それ以上は

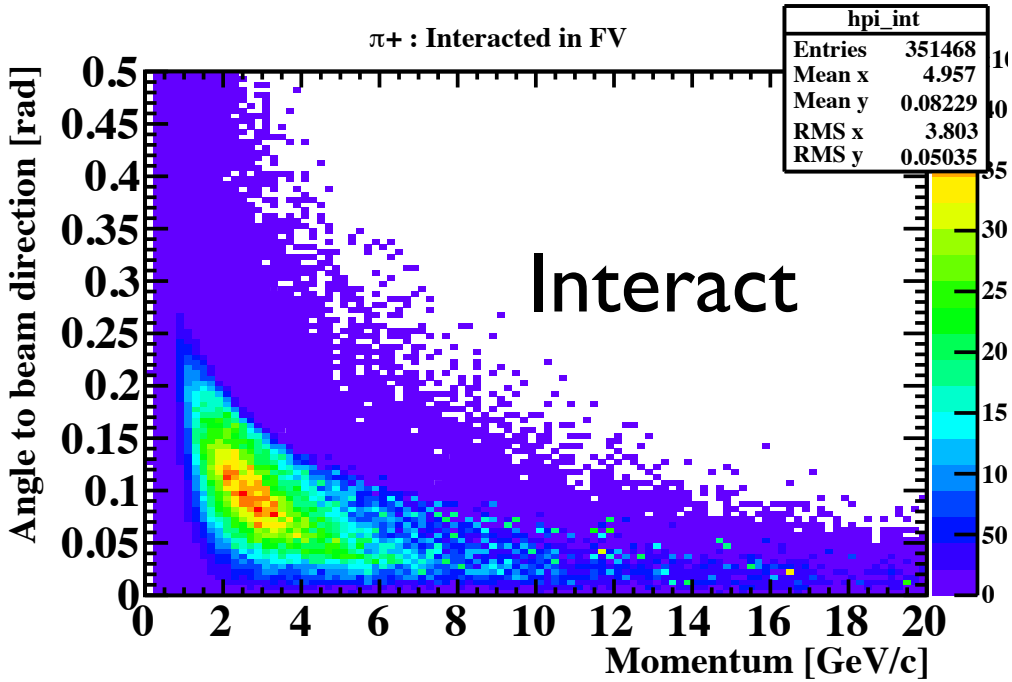
Efficiency=1とした.

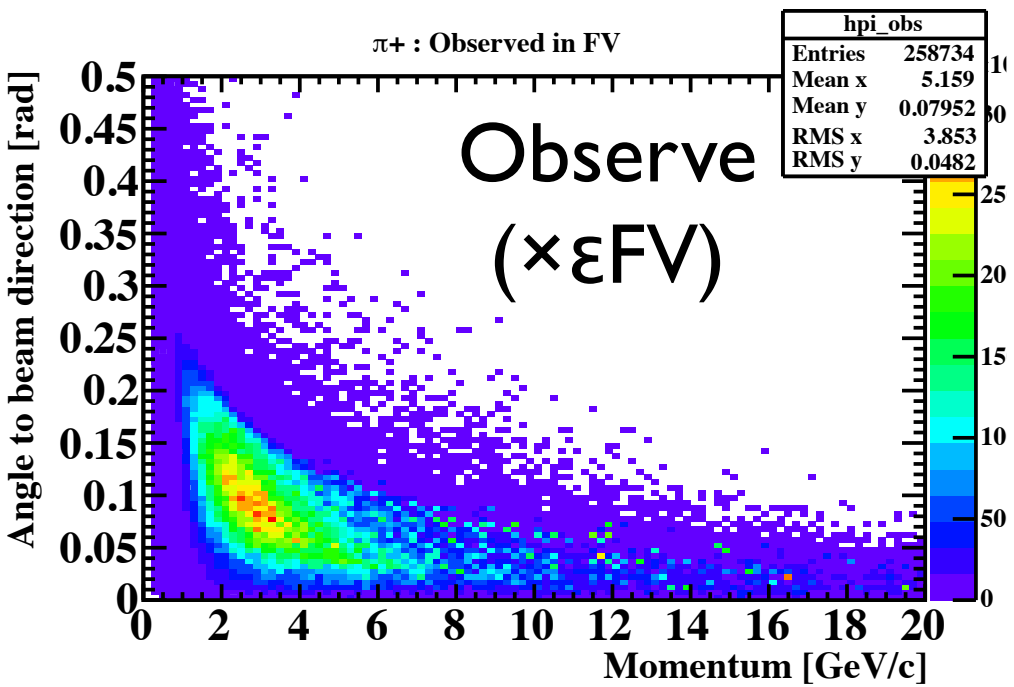
とりあえずこの中心値を使用

π+, K+

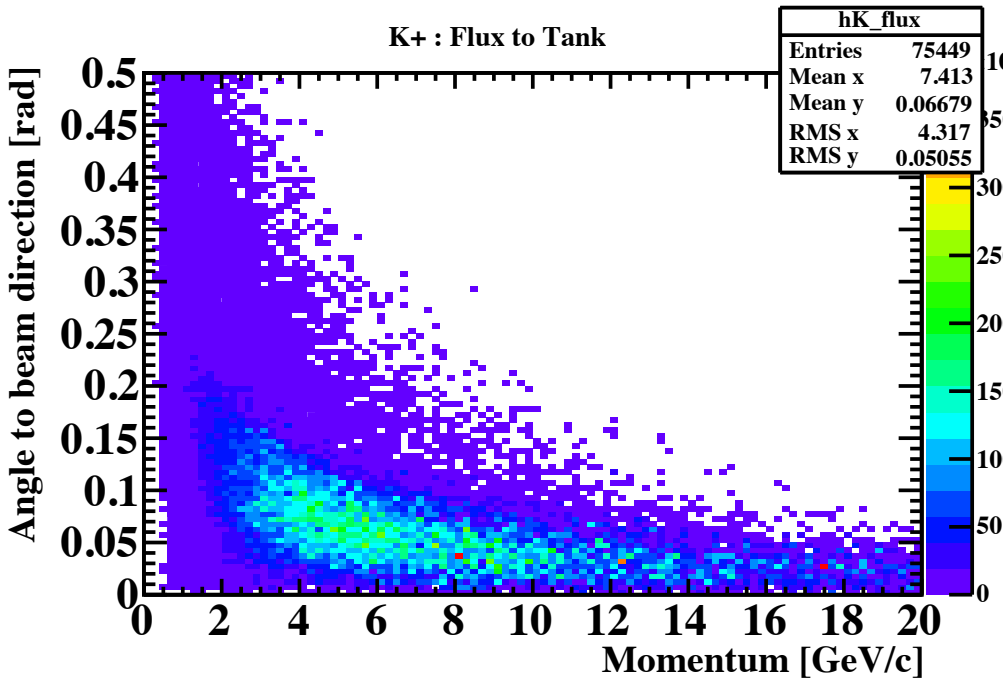
- Proton + C のPrimary interaction で生成されるπ+, K+ の p-theta をチェック.
  - 2次元分布の縦軸は例のごとく[a.u.]...

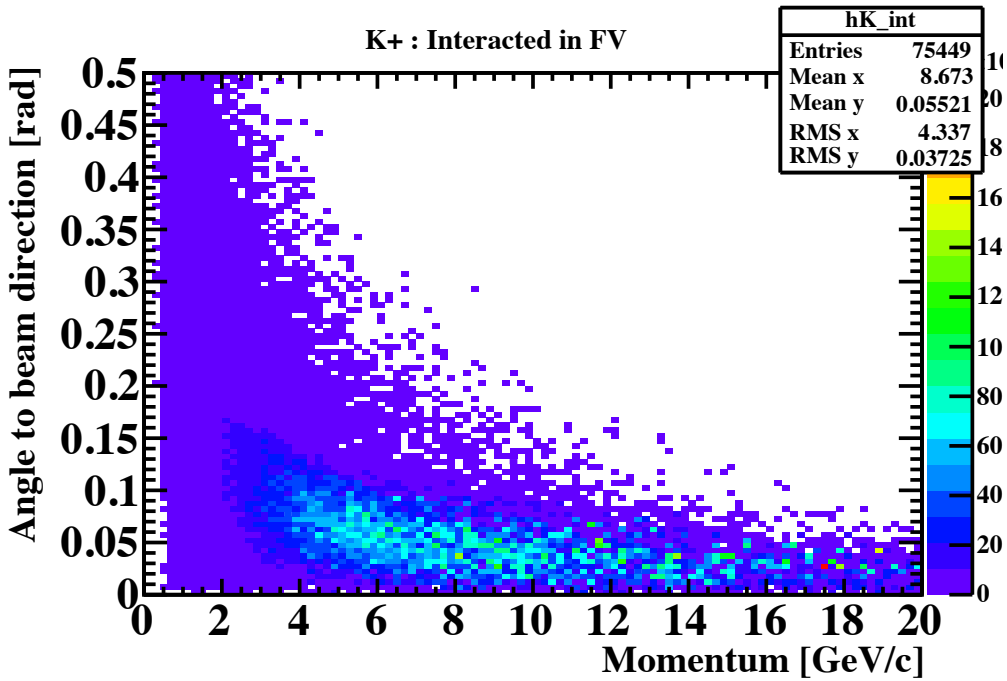


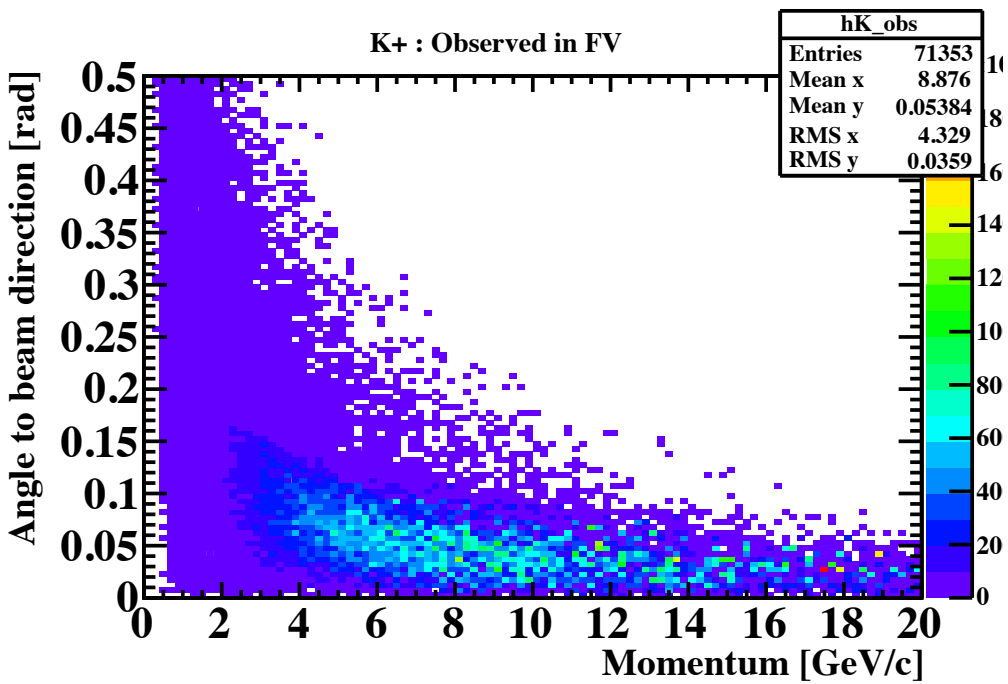




π+ phase space



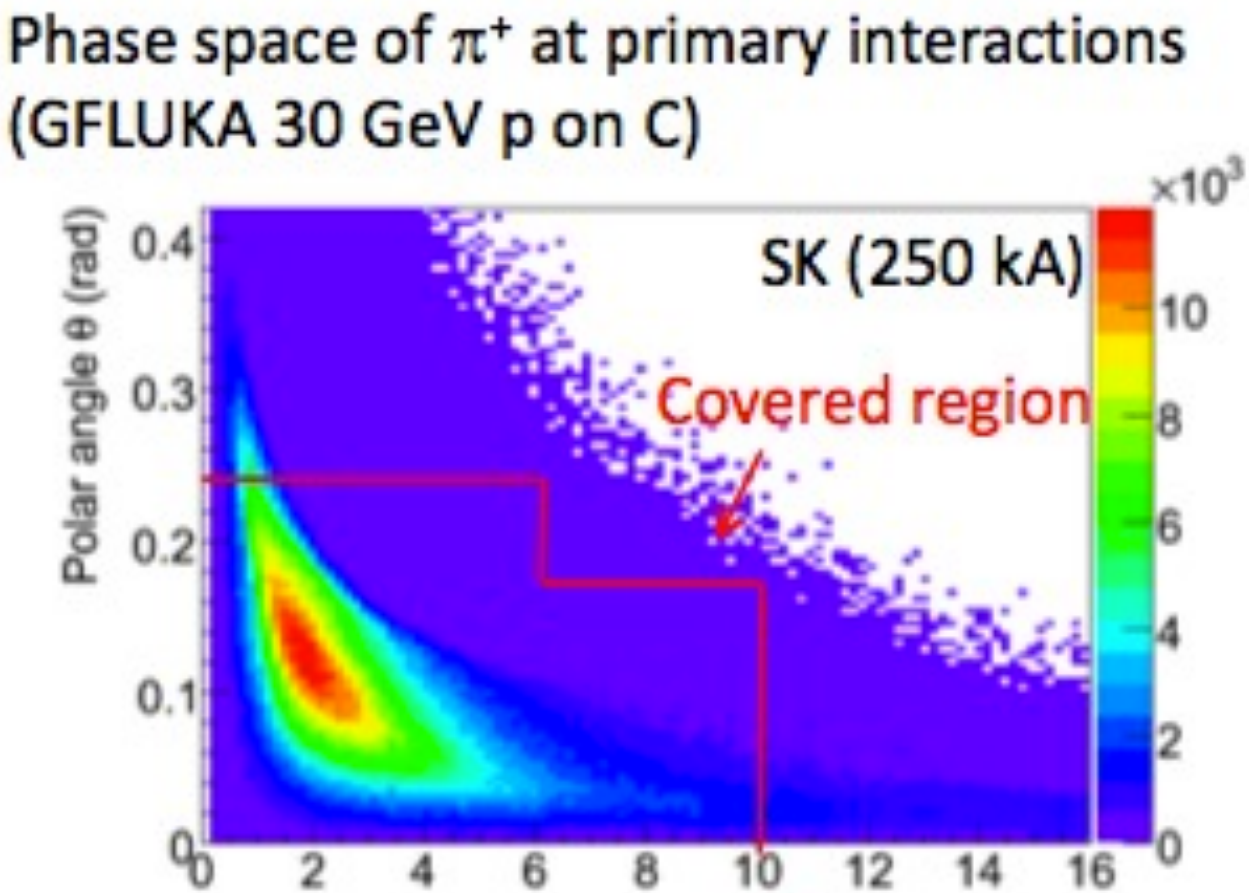




K+ phase space

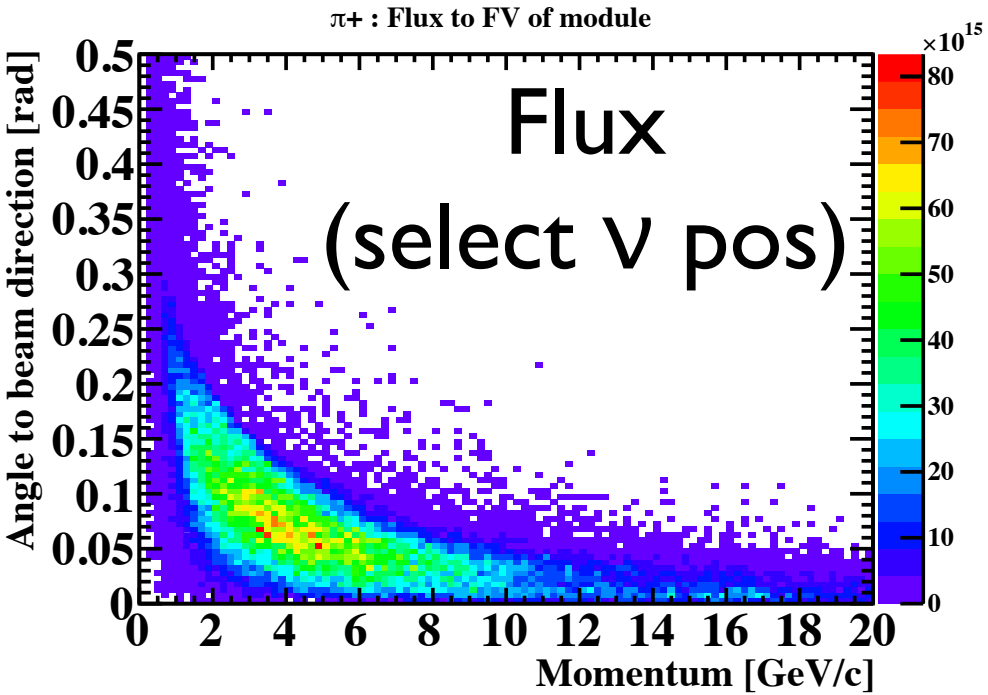
ちなみに Super-K は？

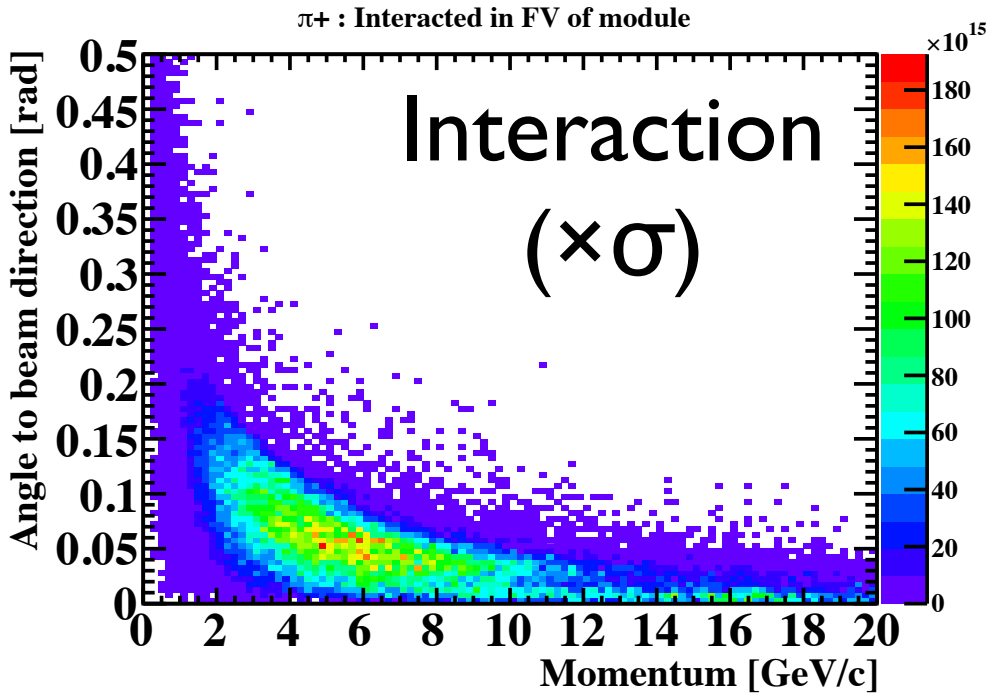
手元にSKのフラックスを用意していなかったので、手元にあった松岡さんの資料(Beam MC meeting, 2010.8.10)より抜粋

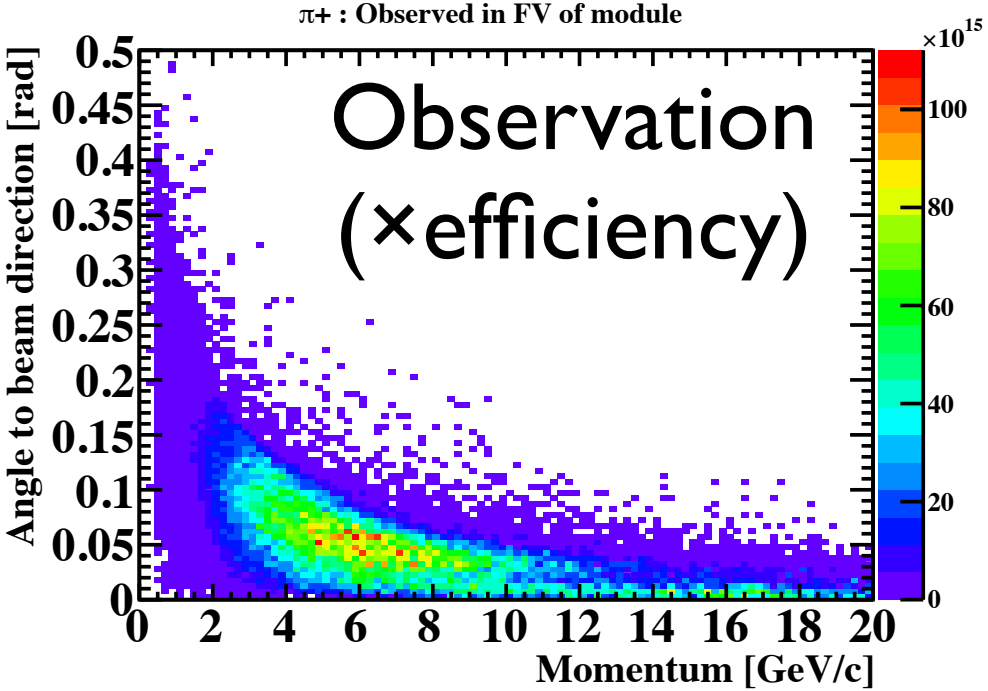


For all neutrino Flux

ちなみに....INGRIDは？

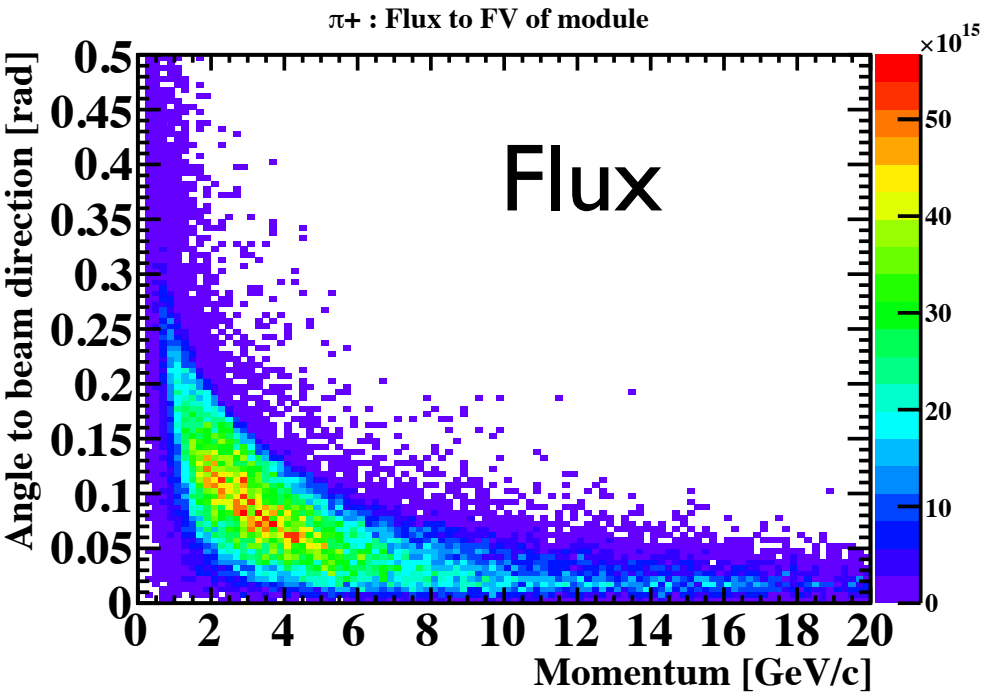


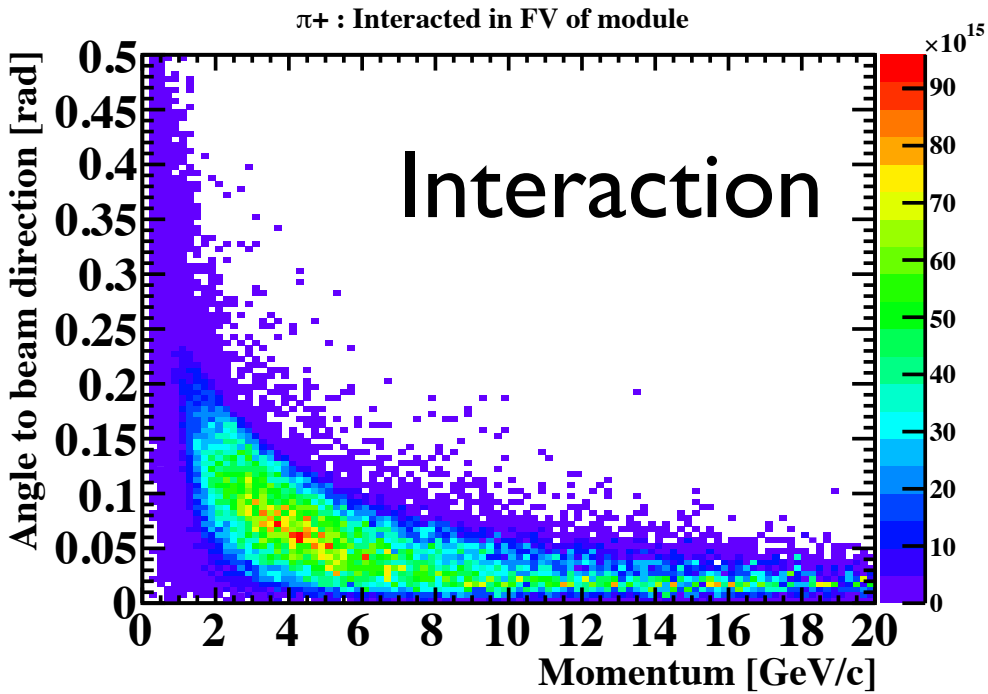


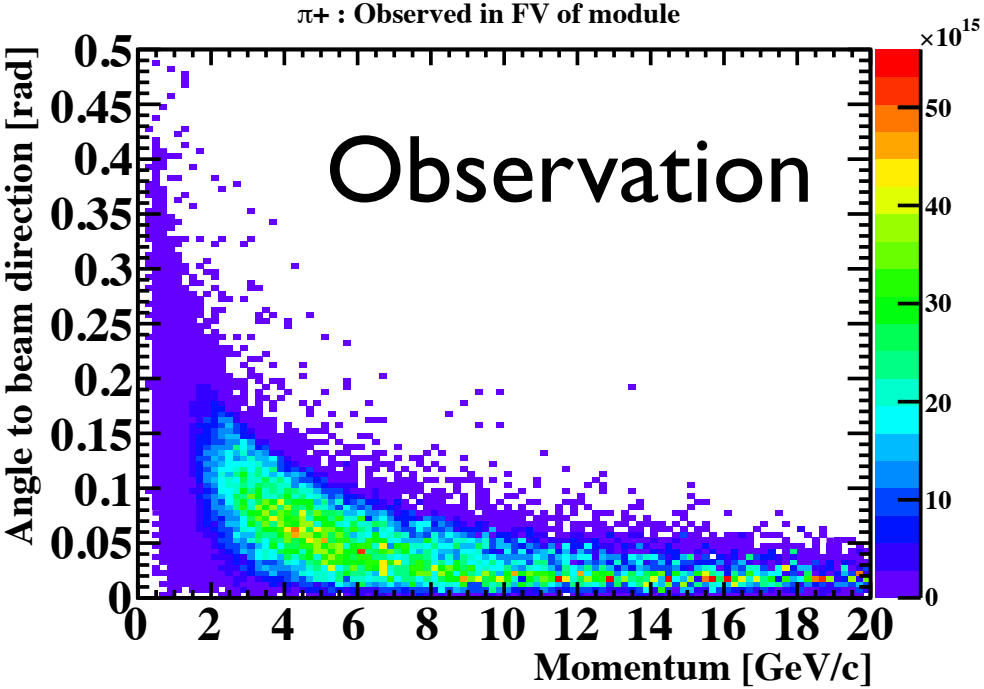


π+ : module 3

(InteractionとObservationの縦の絶対値の単位はA.U.)

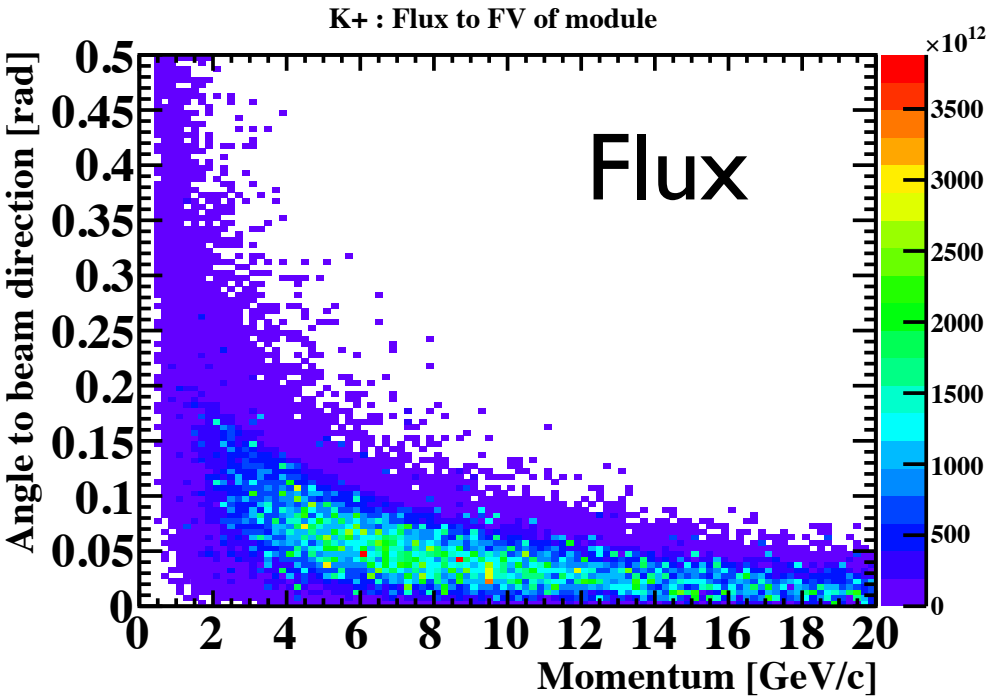


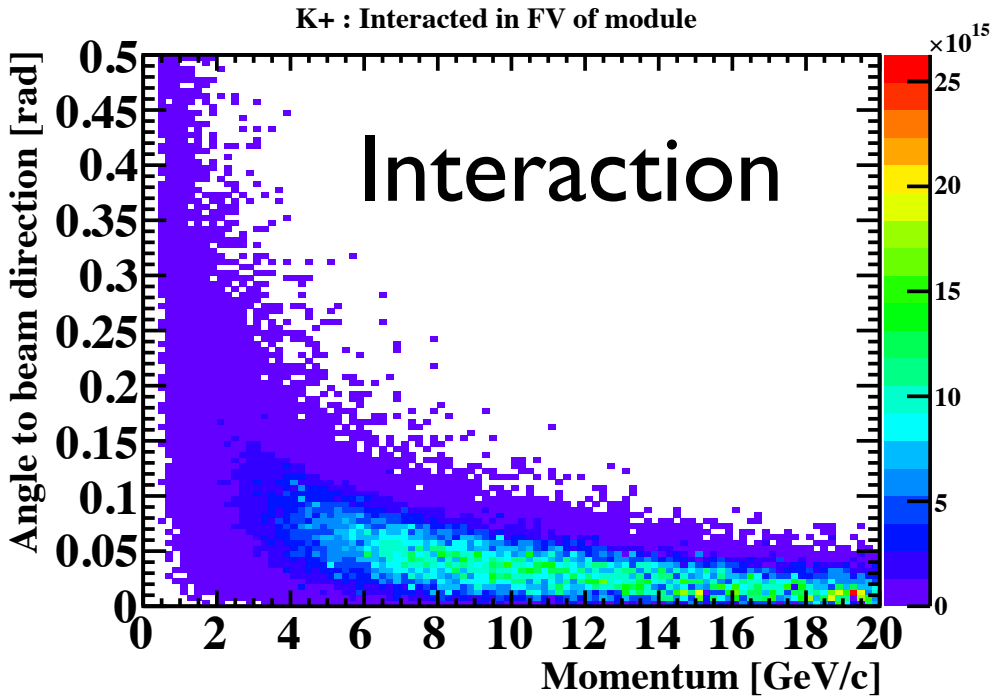


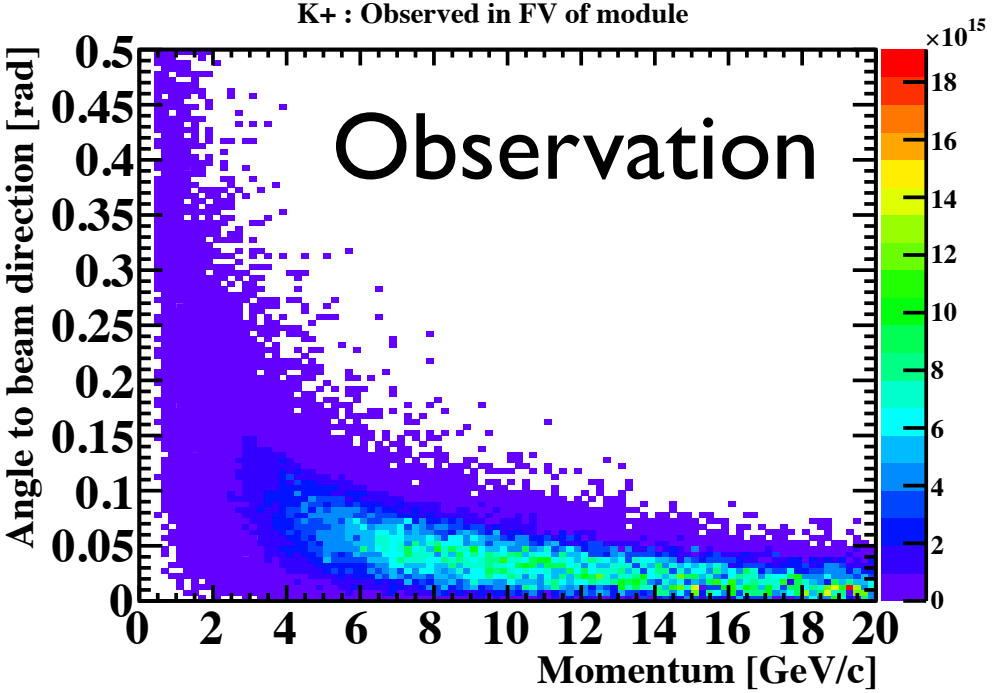


π+ : module 0

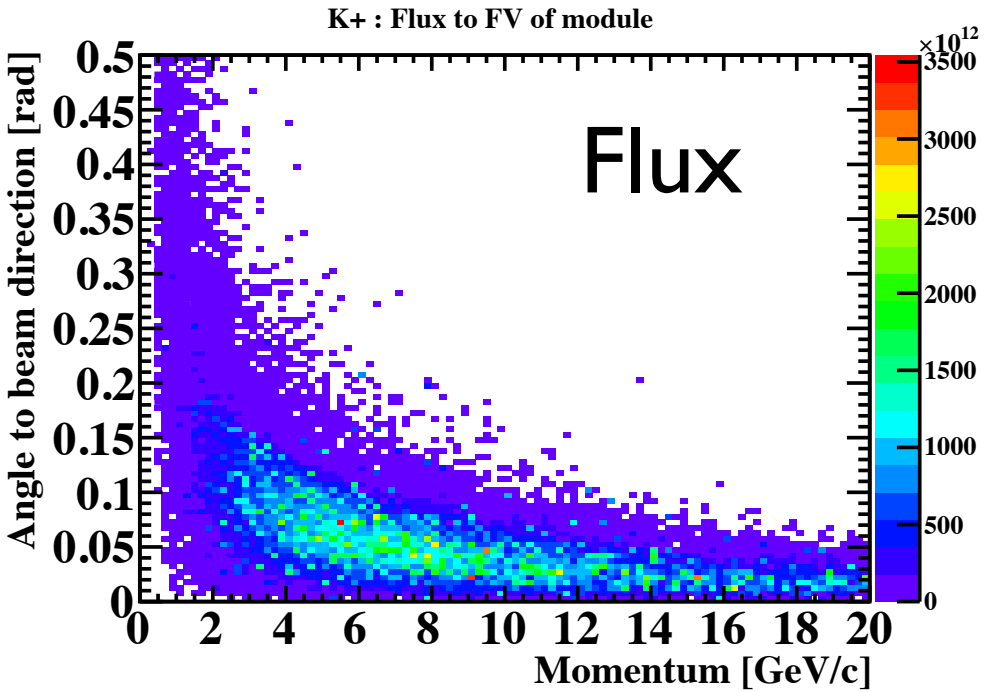
→ 若干 low p, high θ の方に
メインパートが移動

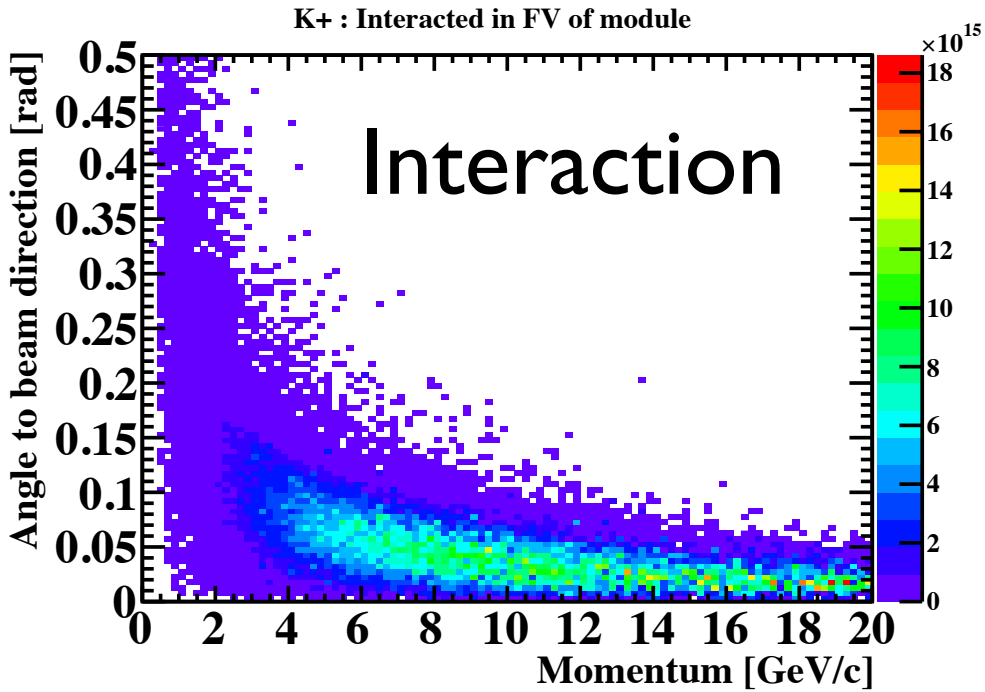

K+ : Flux to FV of module
Flux
Angle to beam direction [rad]
Momentum [GeV/c]
×10^12

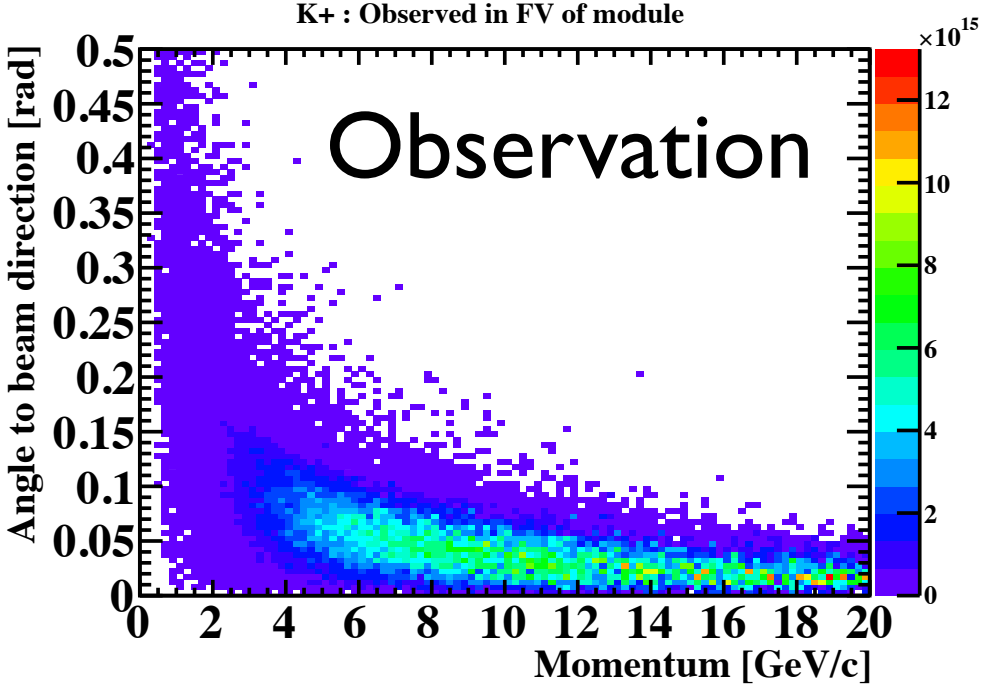

K+ : Interacted in FV of module
Interaction
Angle to beam direction [rad]
Momentum [GeV/c]
×10^15


K+ : Observed in FV of module
Observation
Angle to beam direction [rad]
Momentum [GeV/c]
×10^15

K+ : module 3


K+ : Flux to FV of module
Flux
Angle to beam direction [rad]
Momentum [GeV/c]
×10^12


K+ : Interacted in FV of module
Interaction
Angle to beam direction [rad]
Momentum [GeV/c]
×10^15


K+ : Observed in FV of module
Observation
Angle to beam direction [rad]
Momentum [GeV/c]
×10^15

K+ : module 0