

2020.02.28

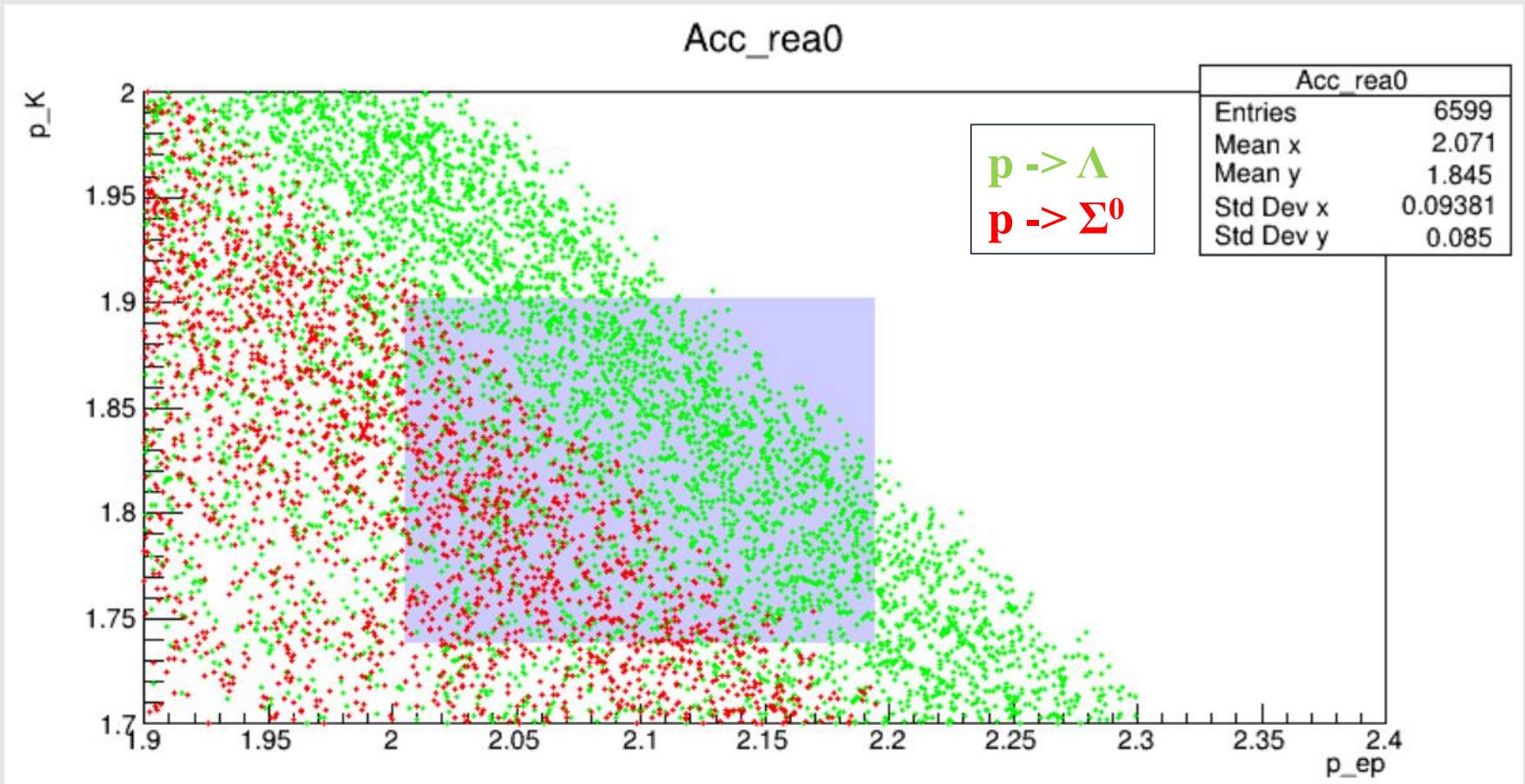
Private



H2 kinematics

(Acceptance dist. is not considered.)

H2 target



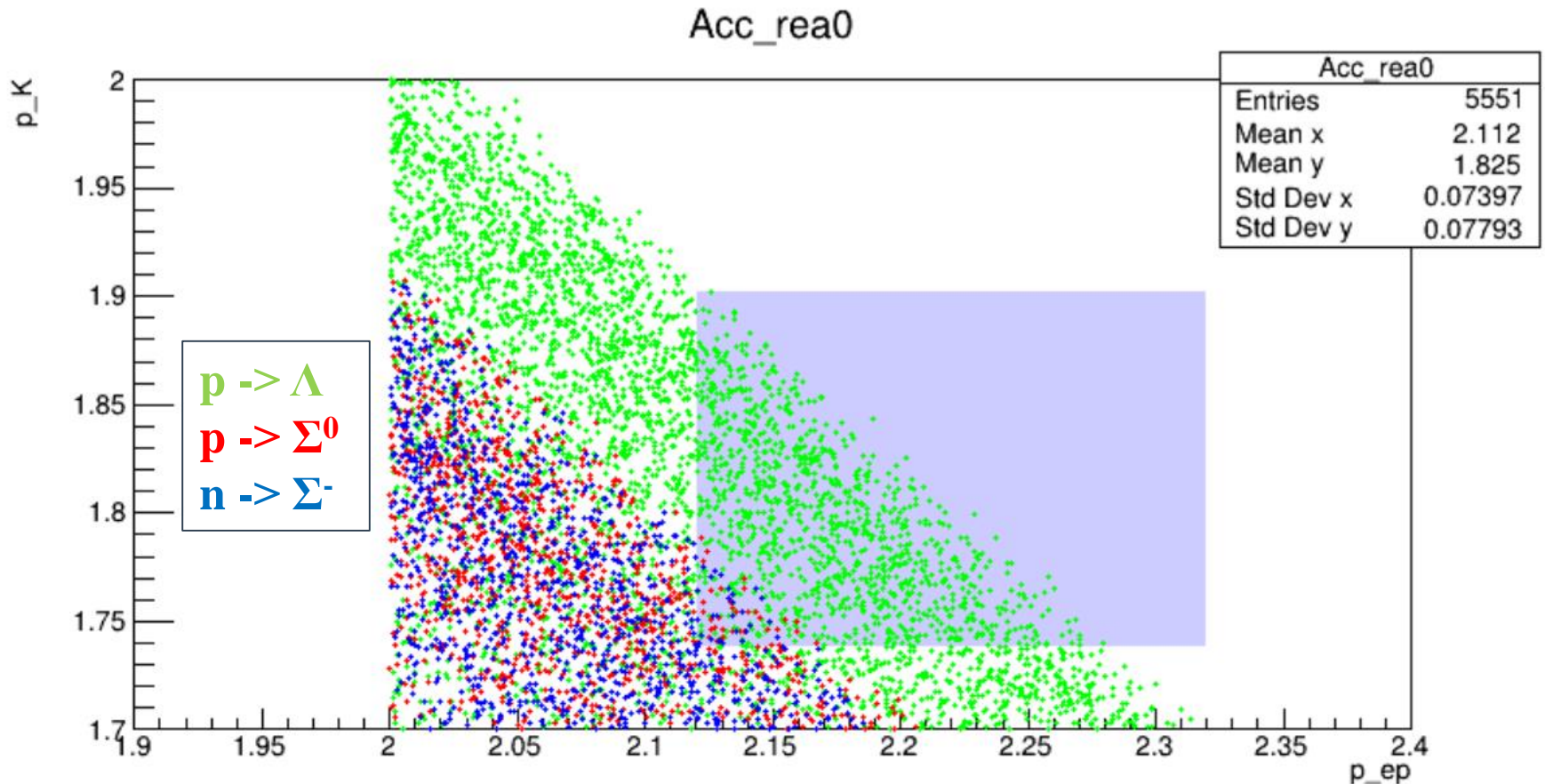
# Event Generation for geant4 seed

3/20

T2 kinematics

(Acceptance dist. is not considered.)

H2 target



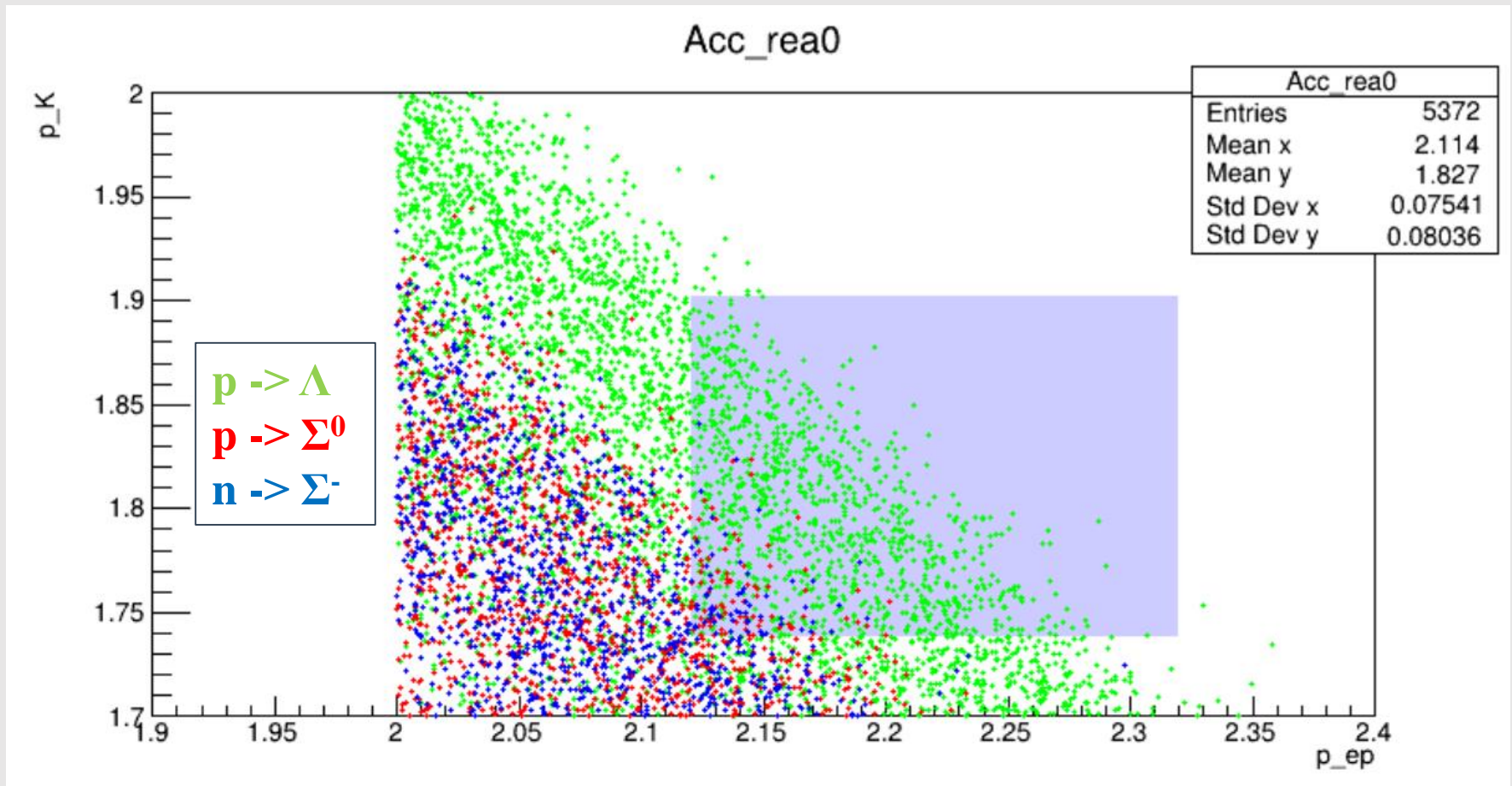
# Event Generation for geant4 seed

4/20

T2 kinematics

(Acceptance dist. is not considered.)

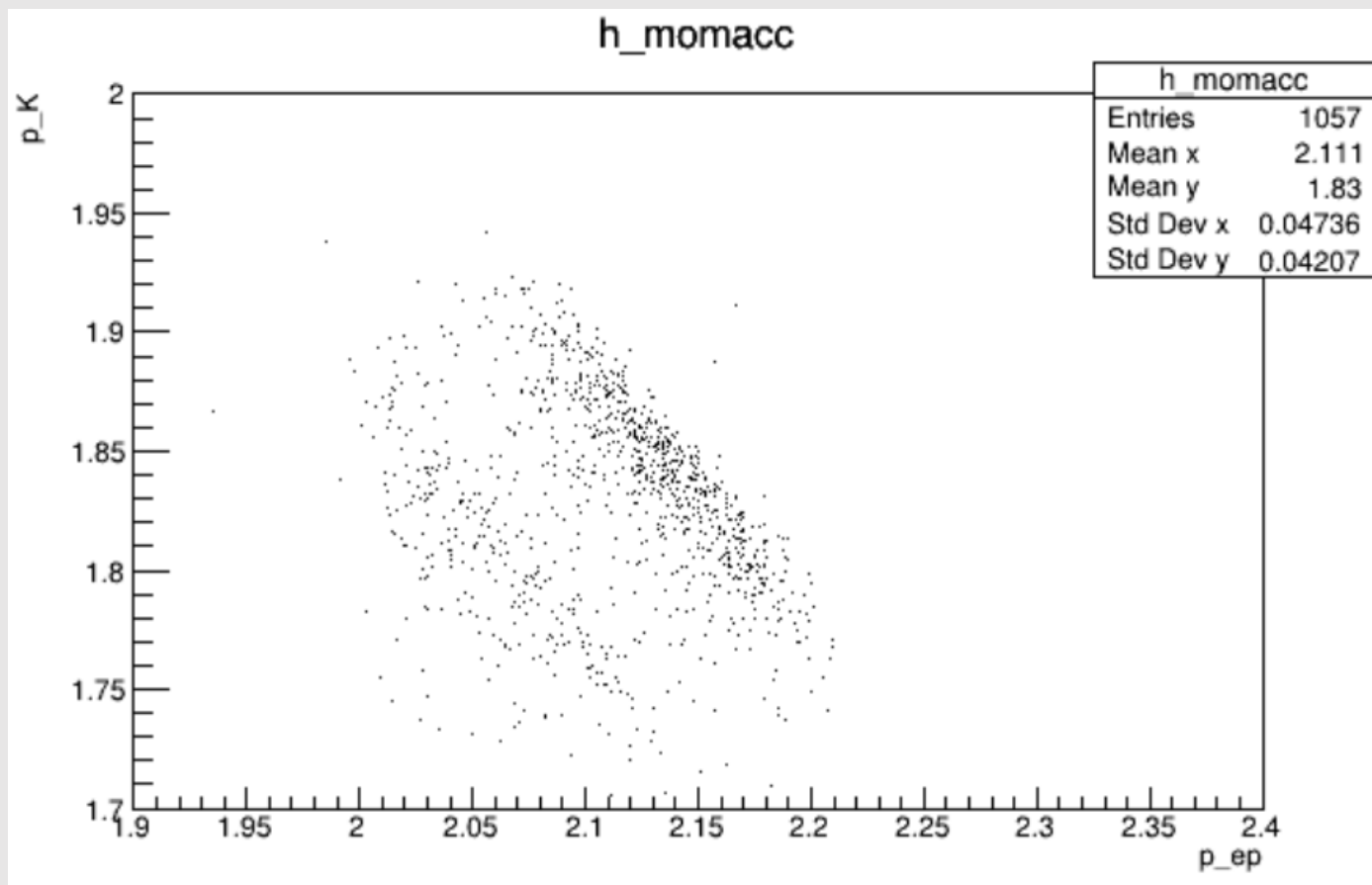
T2 target



## Geant4 Condition

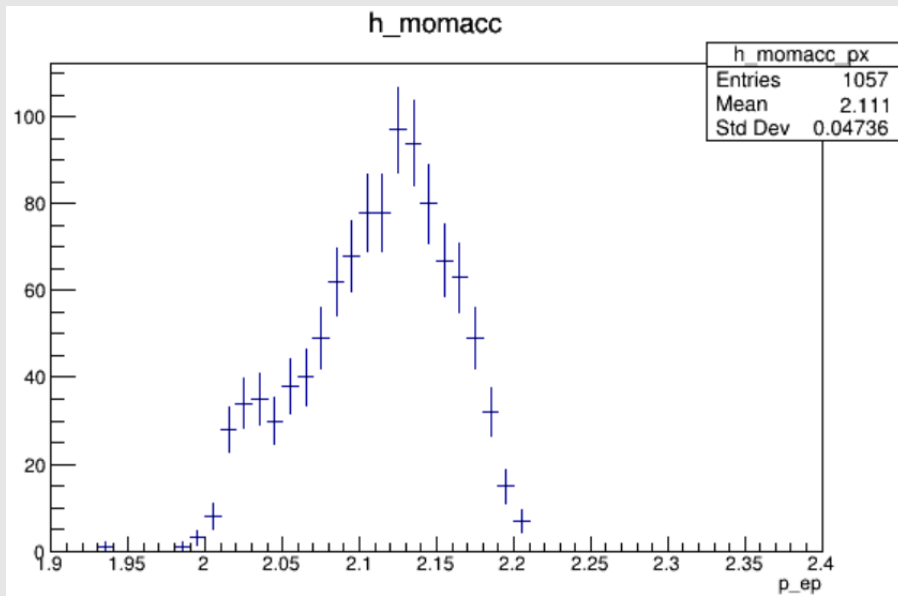
- Including air, target cell, physics (radiation, decay)

Target: H2, Kinematics: H2

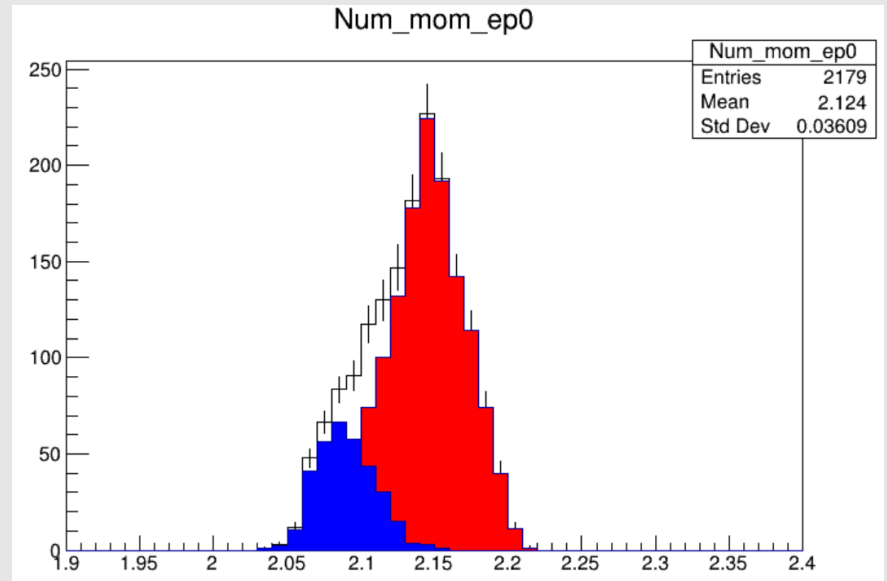




Target: H2, Kinematics: H2



data



sim

D in sim is stronger by 30 MeV?

Target: H2, Kinematics: H2

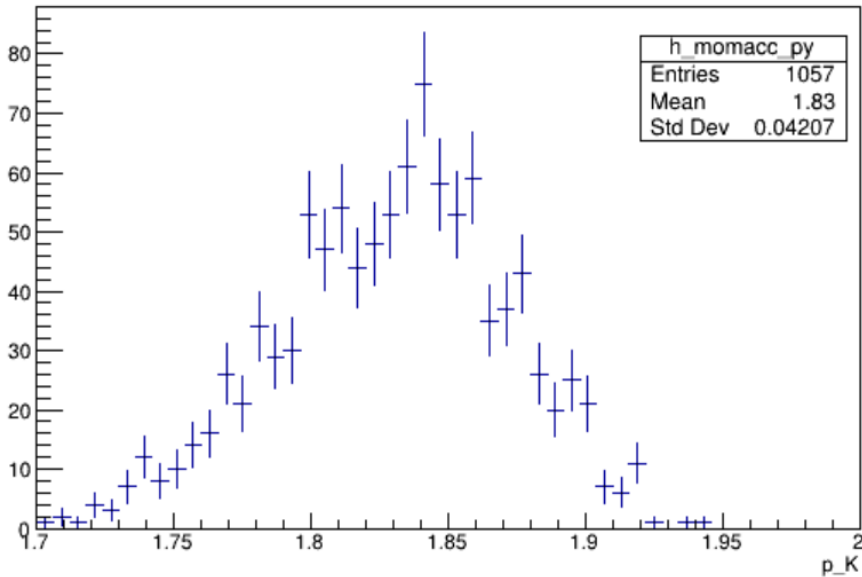
DMAP: 0.56953004

Q1: 0.047

Q2: -0.0155

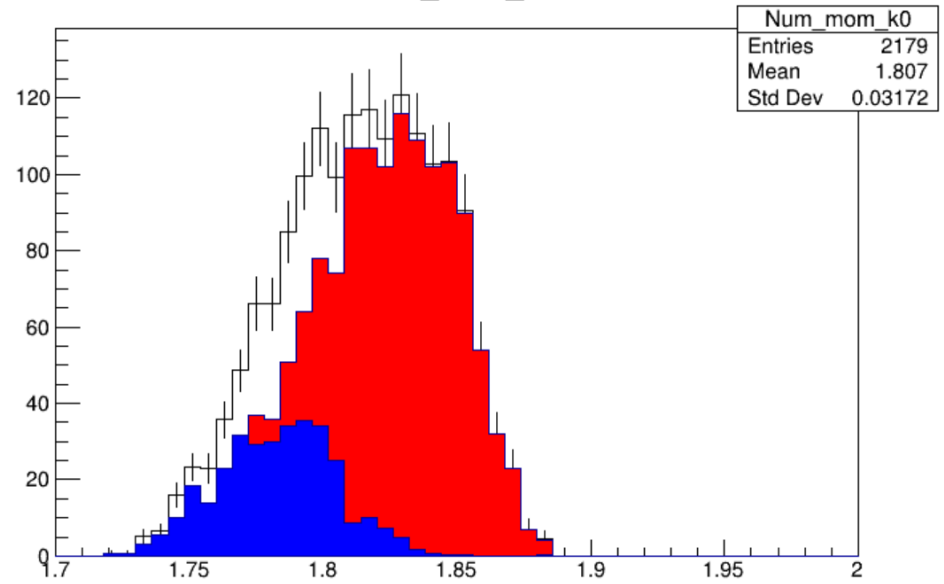
Q3: -0.014329

h\_momacc



data

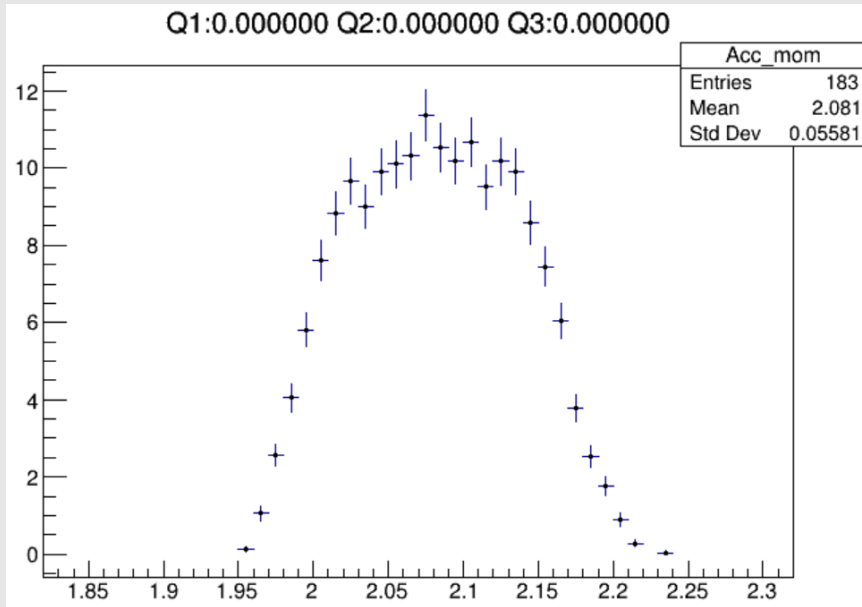
Num\_mom\_k0



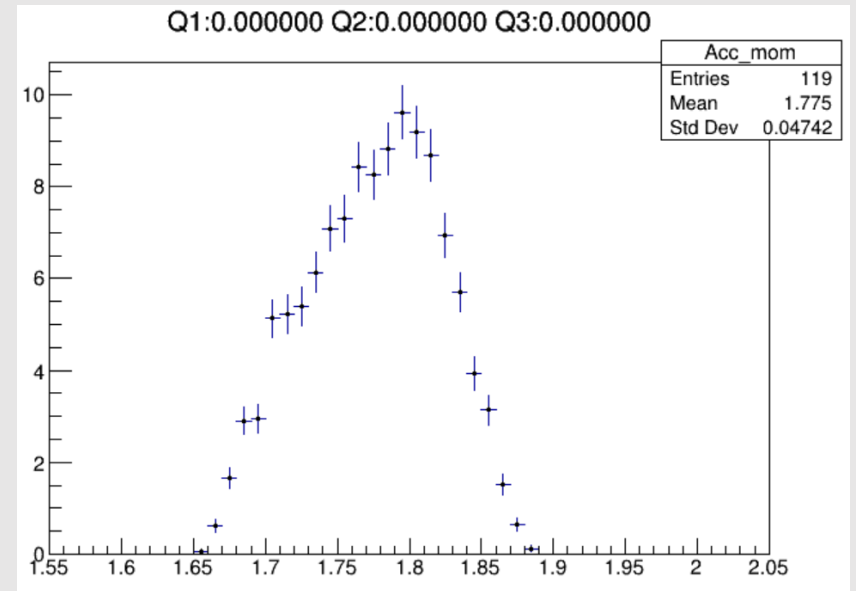
sim



No physics, distribution is random



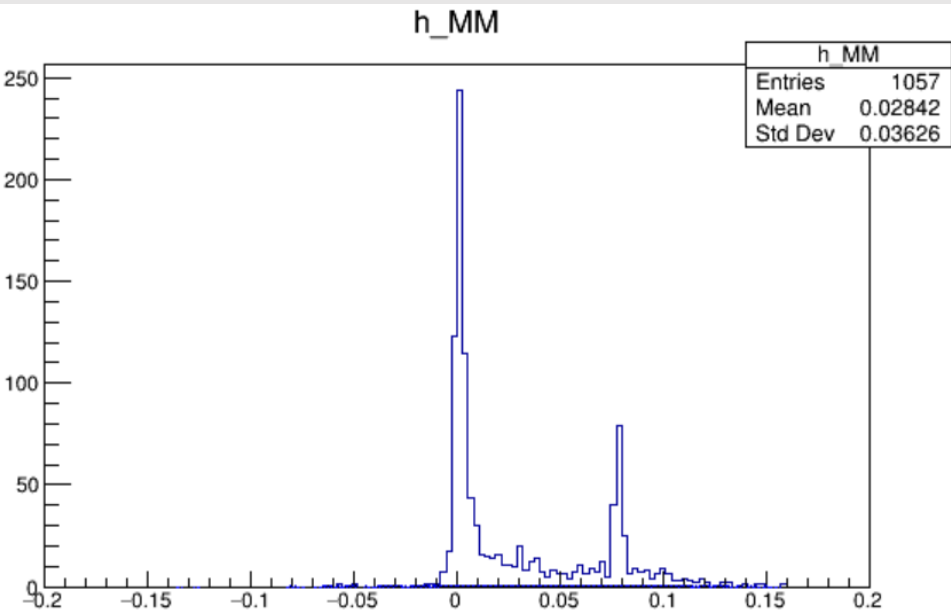
sim



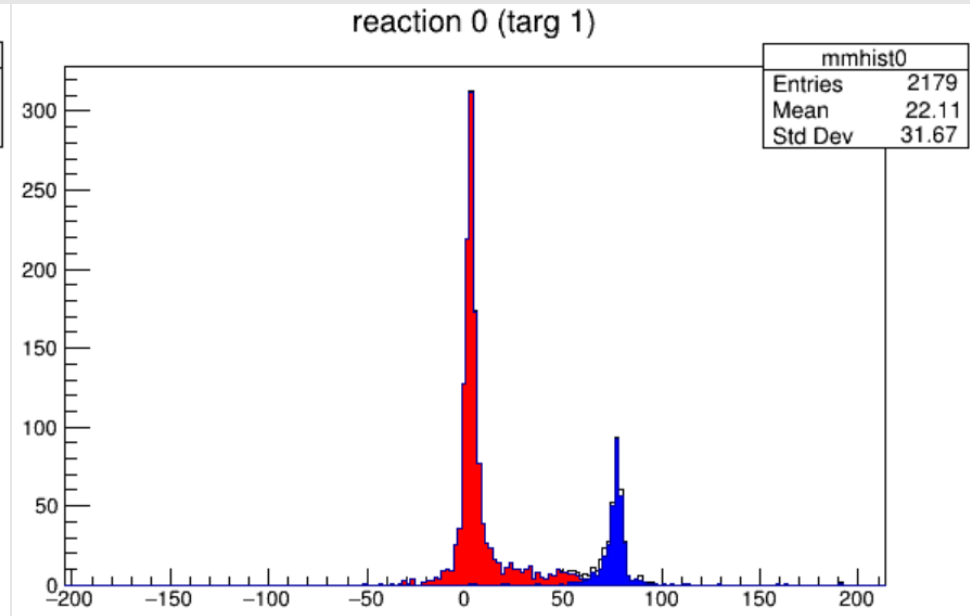
sim

Target: H2, Kinematics: H2

$\Lambda : \Sigma = 1, 0.4$

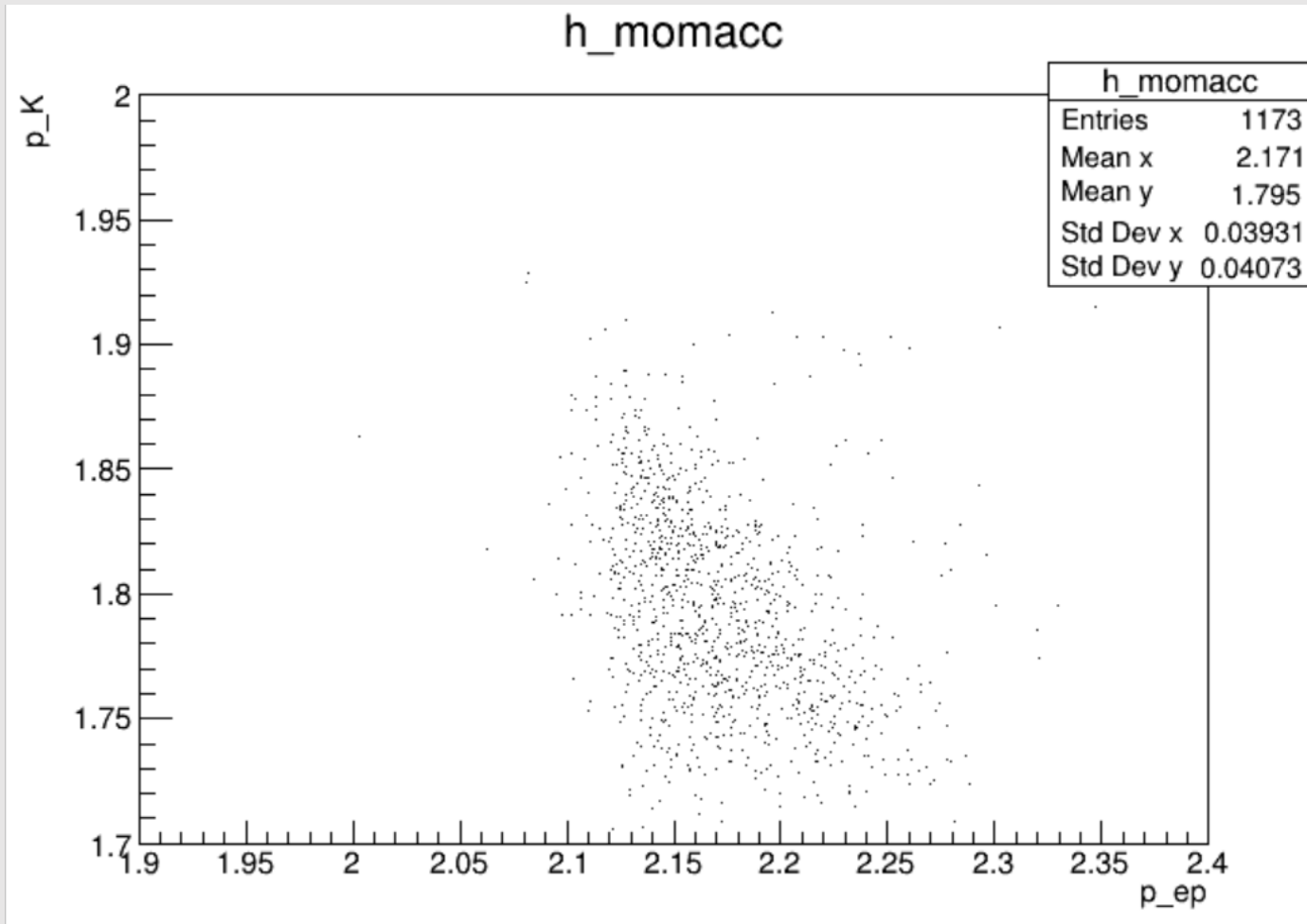


data



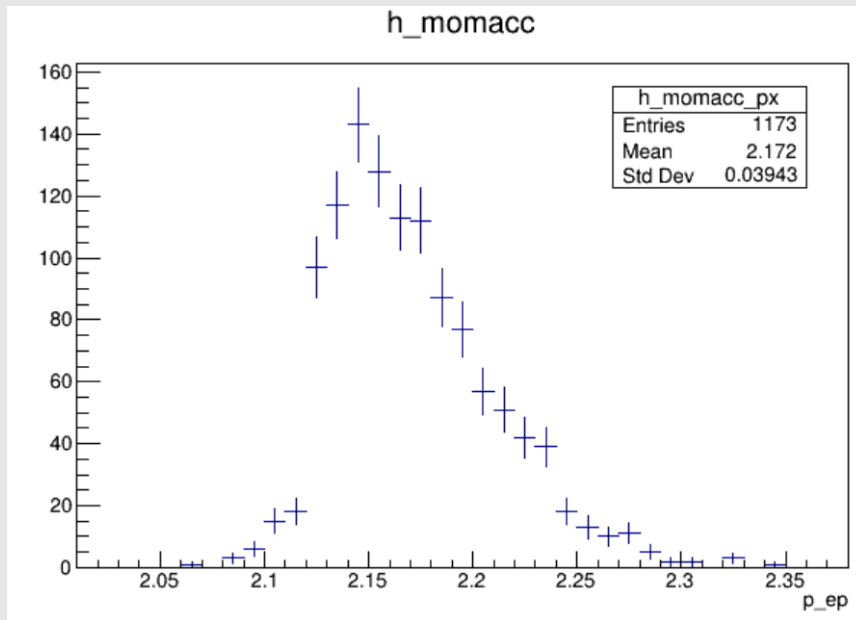
sim

Target: T2, Kinematics: T2

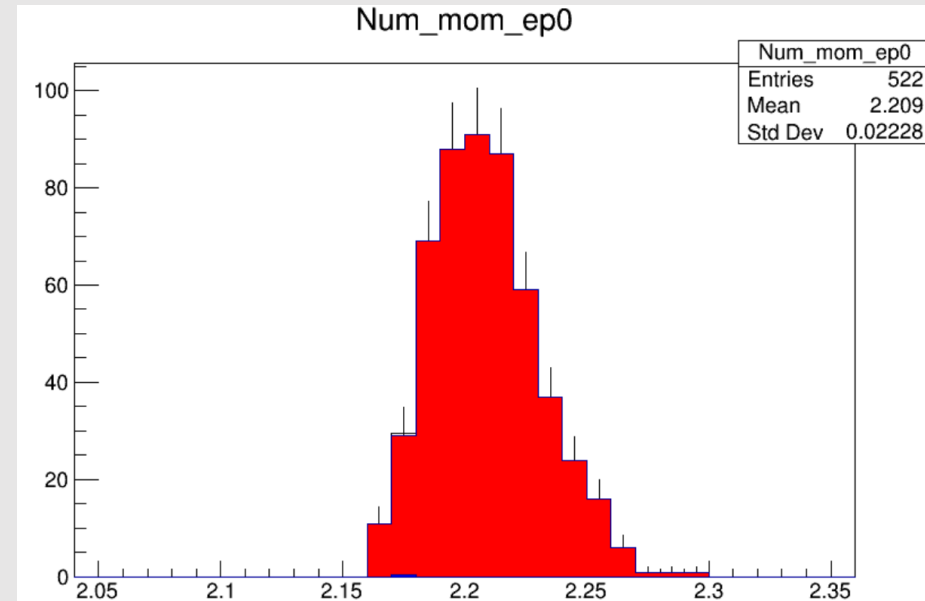


Target: T2, Kinematics: T2

DMAP: 0.7104  
Q1: -0.057085714  
Q2: 0.017971429  
Q3: 0.016613729



data



sim

Target: T2, Kinematics: T2

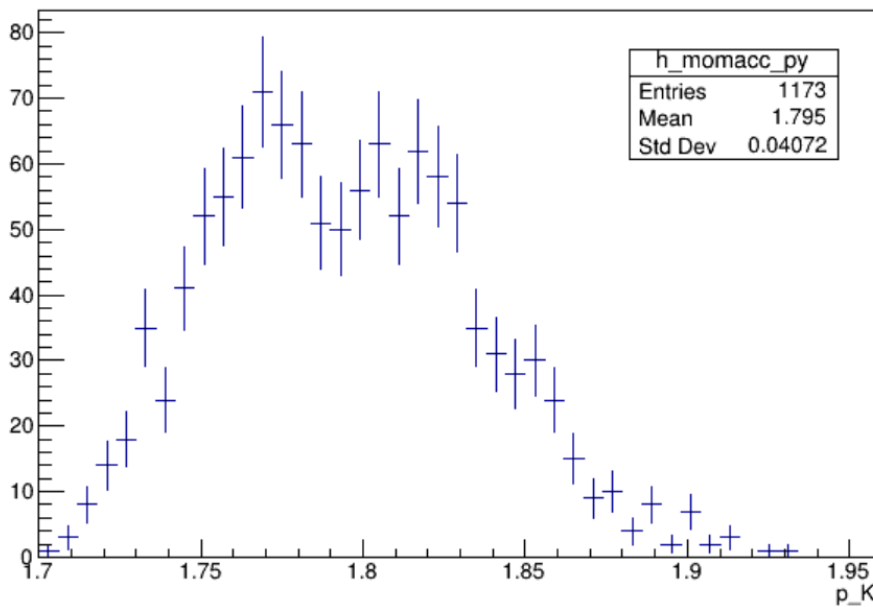
DMAP: -0.56953004

Q1: 0.047

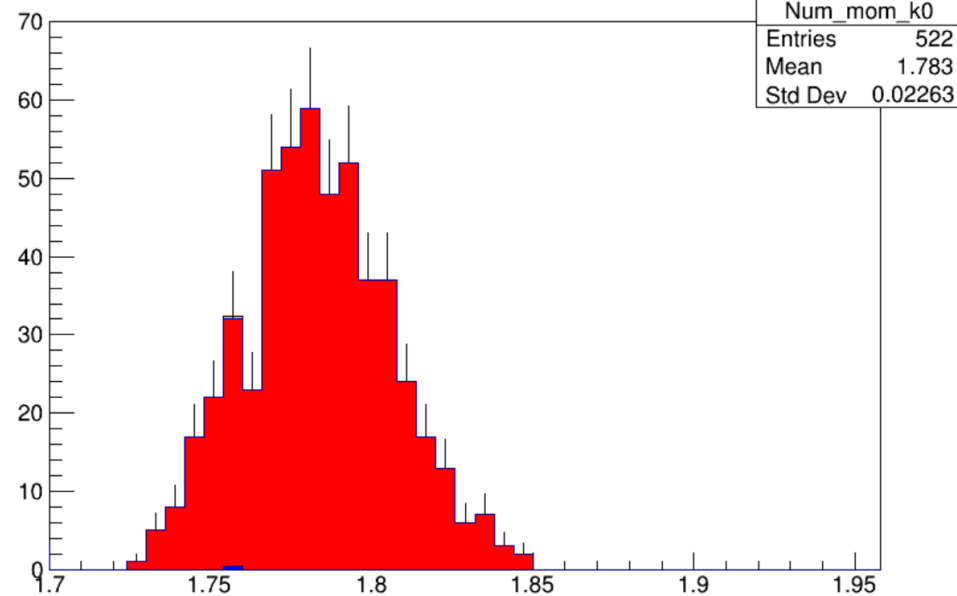
Q2: -0.0155

Q3: -0.014329

h\_momacc



Num\_mom\_k0

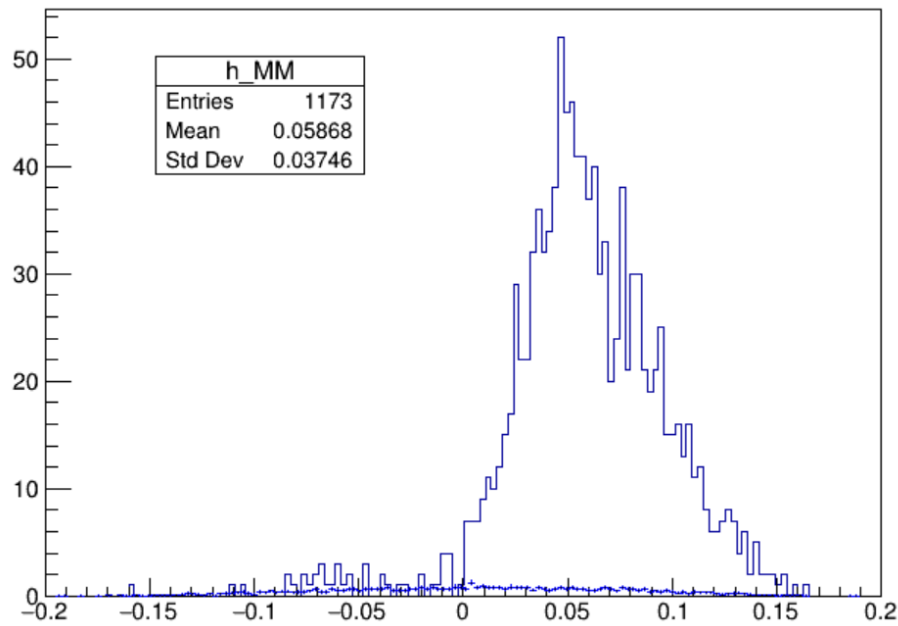


data

sim

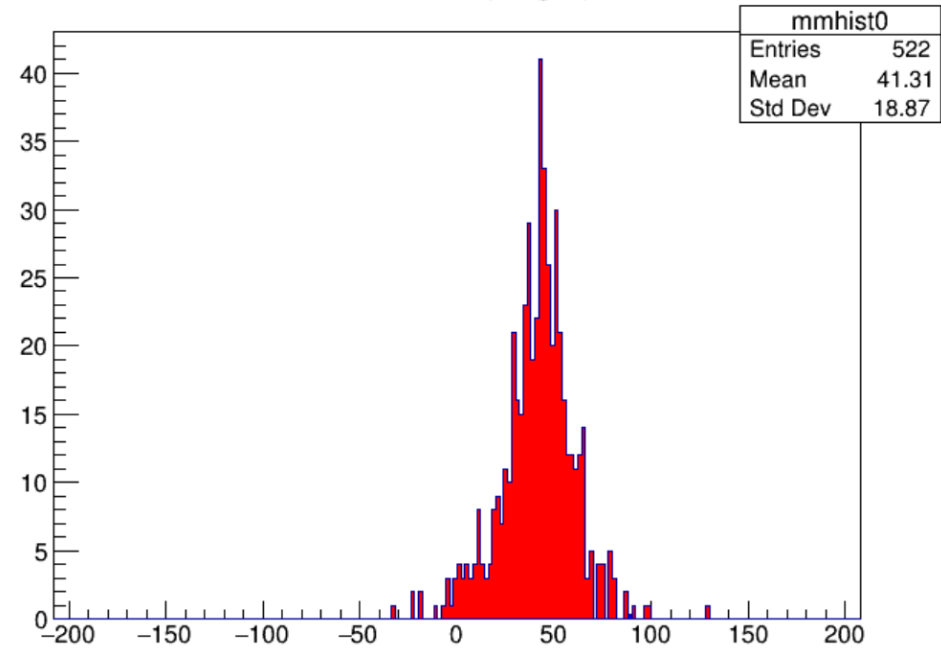
Target: T2, Kinematics: T2

h\_MM



data

reaction 0 (targ 3)

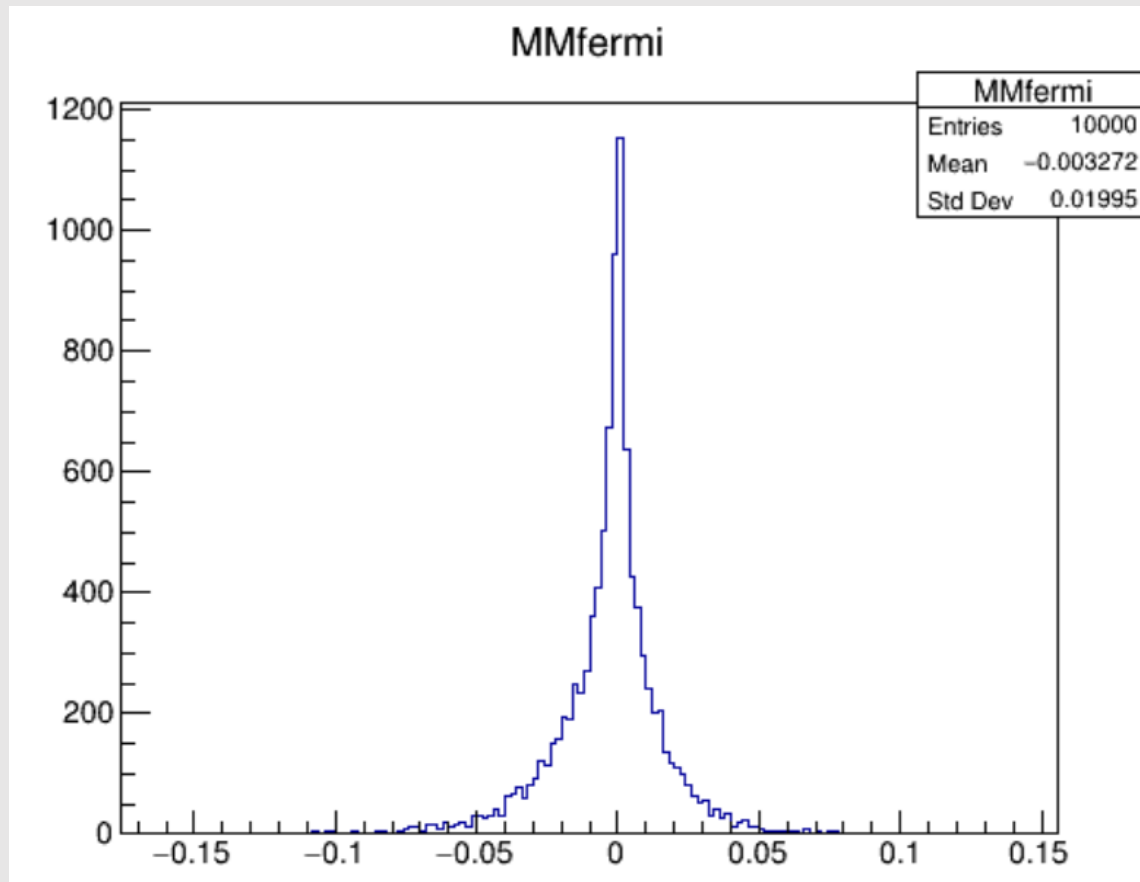


sim

T2 kinematics

(Acceptance dist. is not considered.)

T2 target





もともとelectron側とkaon側で独自にQ, Dの値が決められていた



HRSでは比が変わるだけのはず



とりあえず、現状のelectronに合わせてkaonの値を変える

No physics, distribution is random

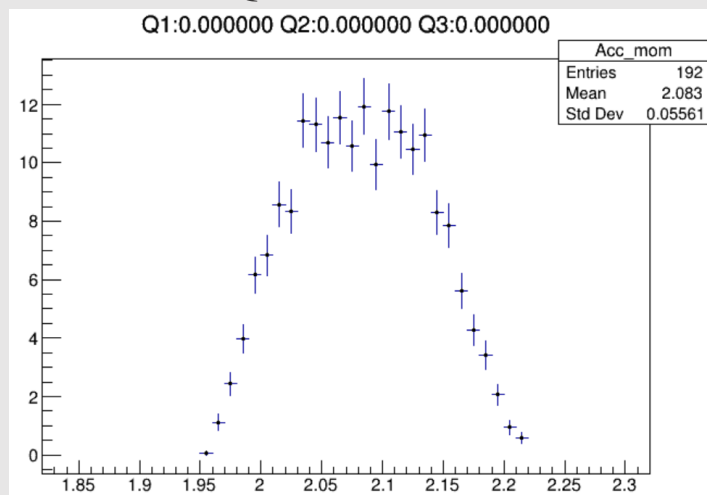
DMAP: 0.672

Q1: -0.054

Q2: 0.0170

Q3: 0.015715690

さっきと一緒



sim

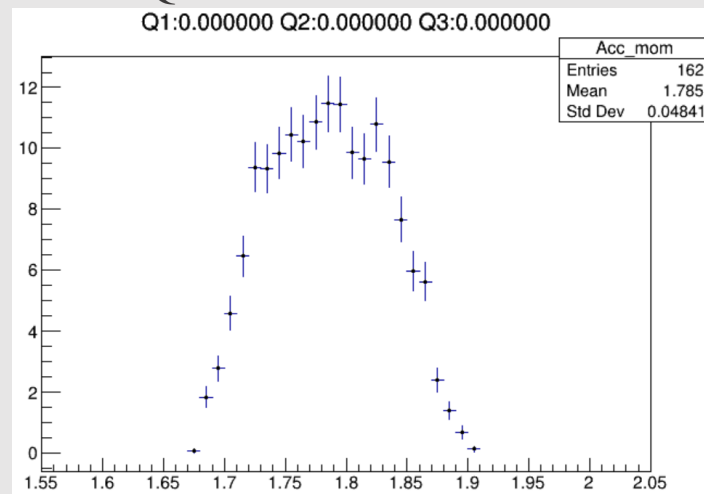
nnl\_zras\_Hkine\_20200229.root

DMAP: -0.576

Q1: 0.046285714

Q2: -0.014571429 electronを基準にした

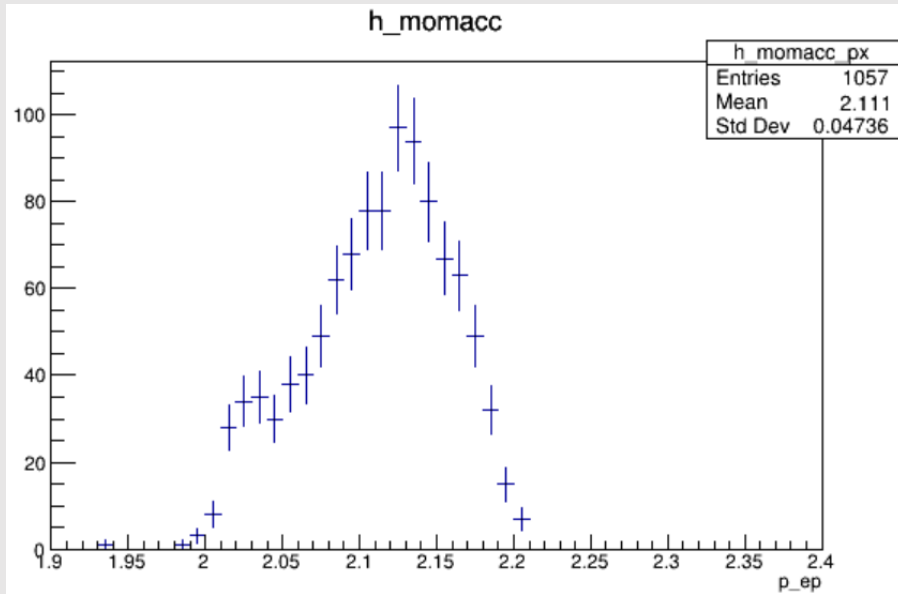
Q3: -0.013470591



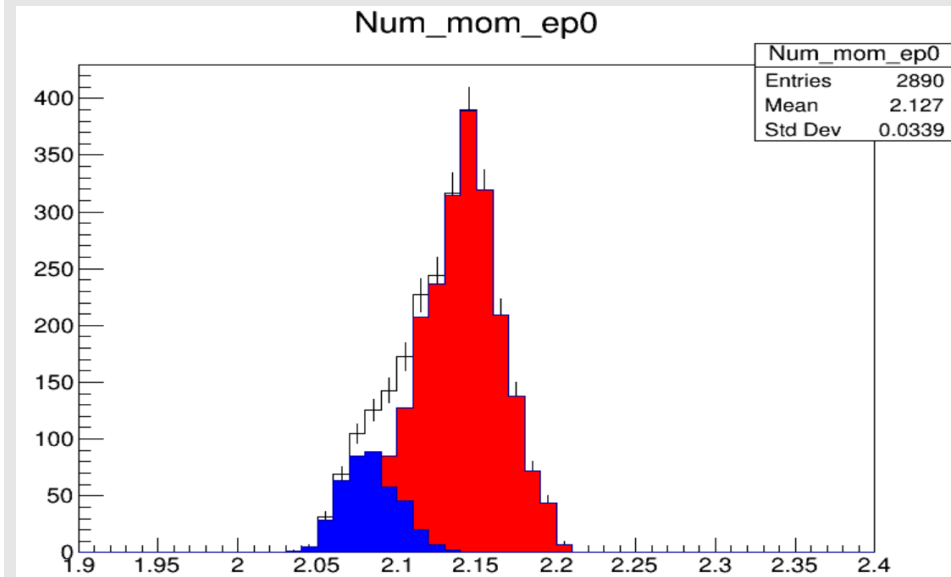
sim

nnl\_zras\_k\_20200229.root

Target: H2, Kinematics: H2



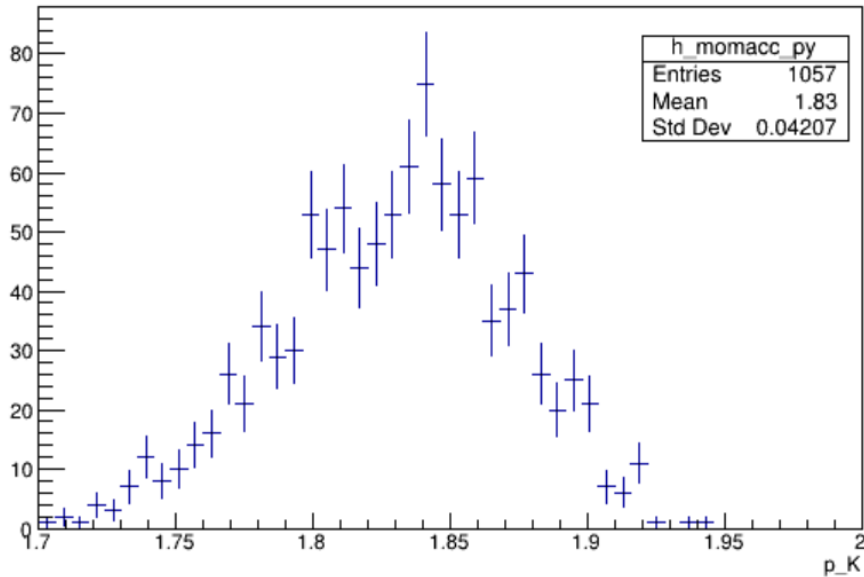
data



sim

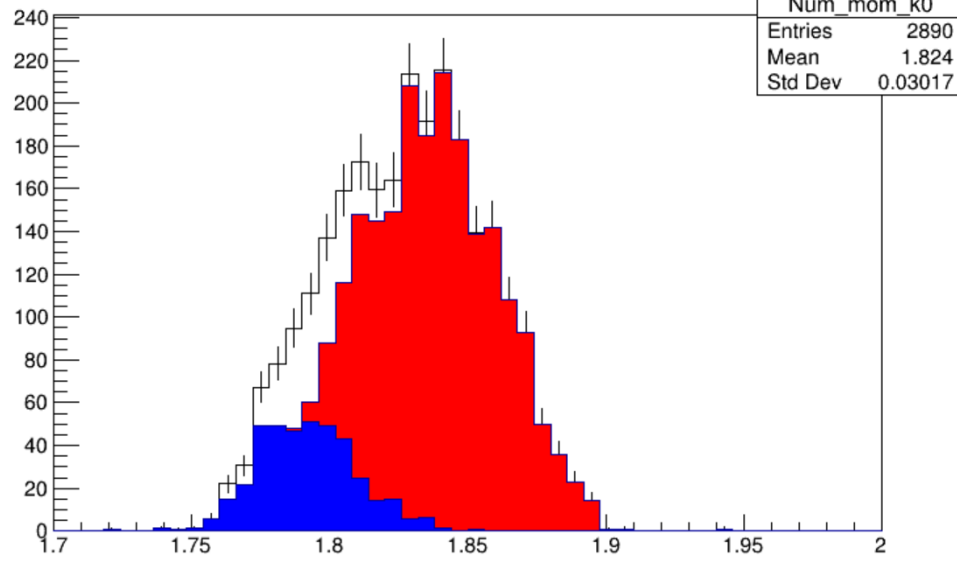
Target: H2, Kinematics: H2

h\_momacc



data

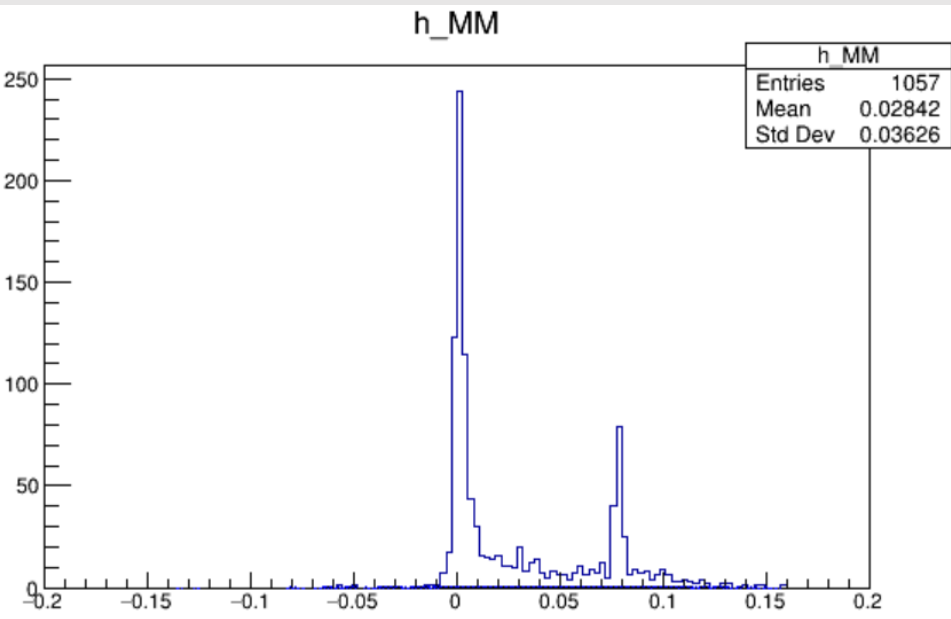
Num\_mom\_k0



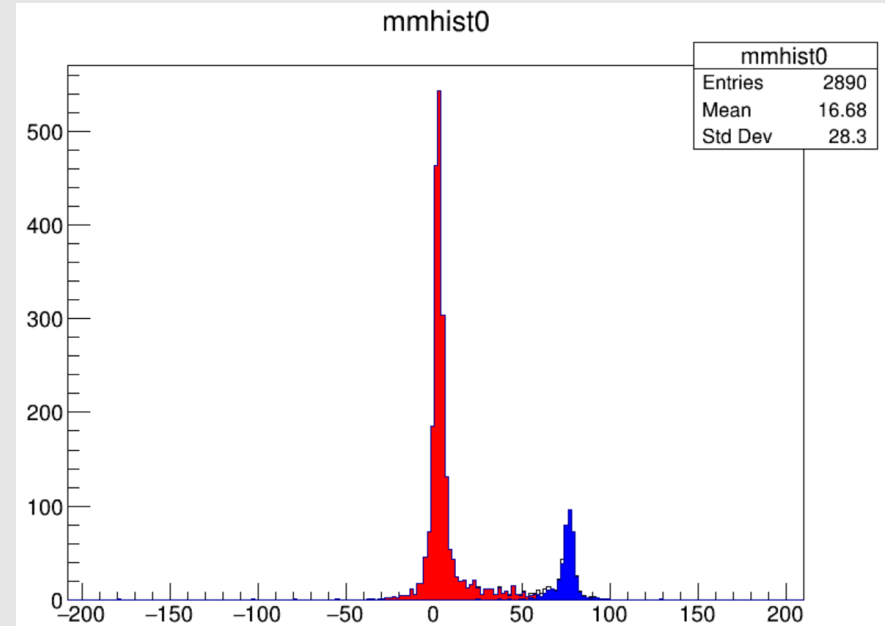
sim

Target: H2, Kinematics: H2

$\Lambda : \Sigma = 1 : 0.6$



data



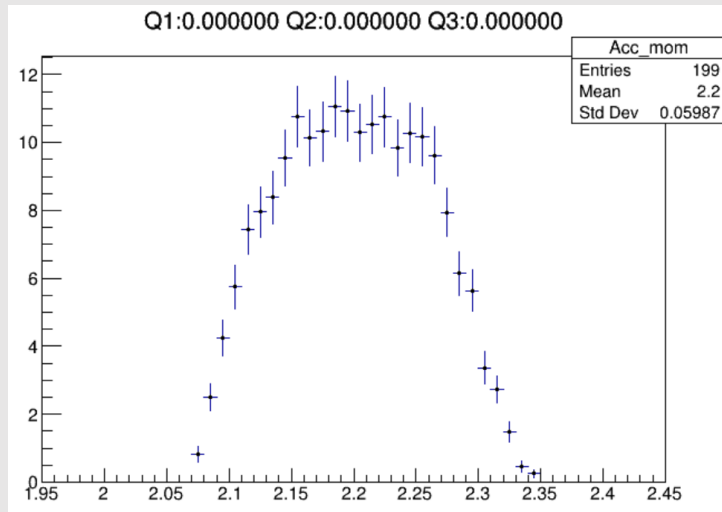
sim



No physics, distribution is random

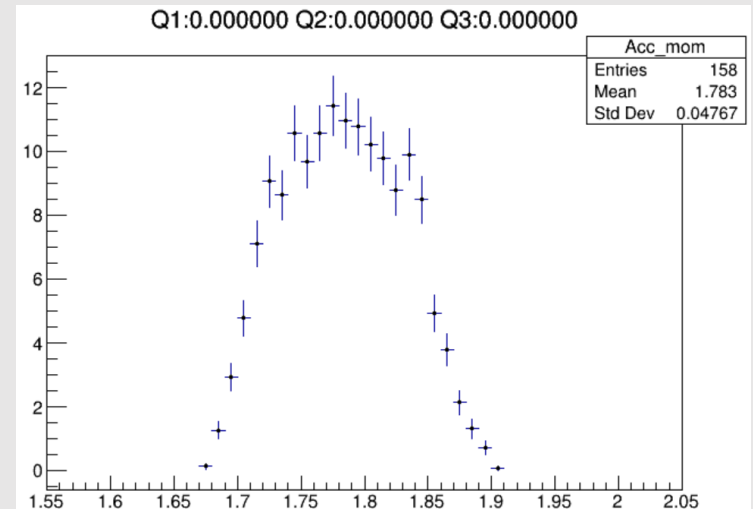
DMAP: 0.7104  
 Q1: -0.057085714  
 Q2: 0.017971429 e2.1GeVを基準  
 Q3: 0.016613729

DMAP: -0.576  
 Q1: 0.046285714  
 Q2: -0.014571429 e2.1GeVを基準にした  
 Q3: -0.013470591



sim

nnl\_zras\_Tkine\_20200229.root



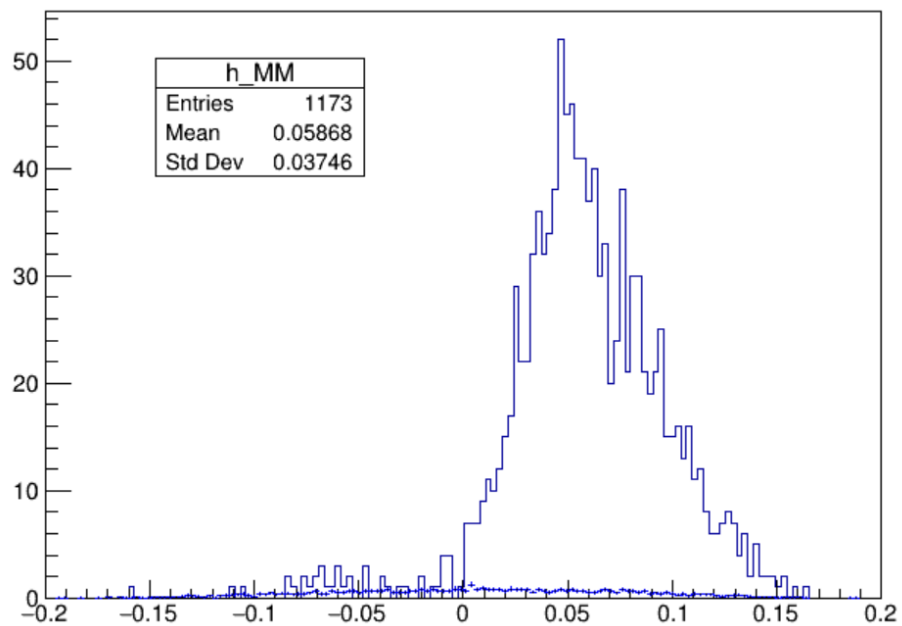
sim

nnl\_zras\_Tkink\_20200229.root



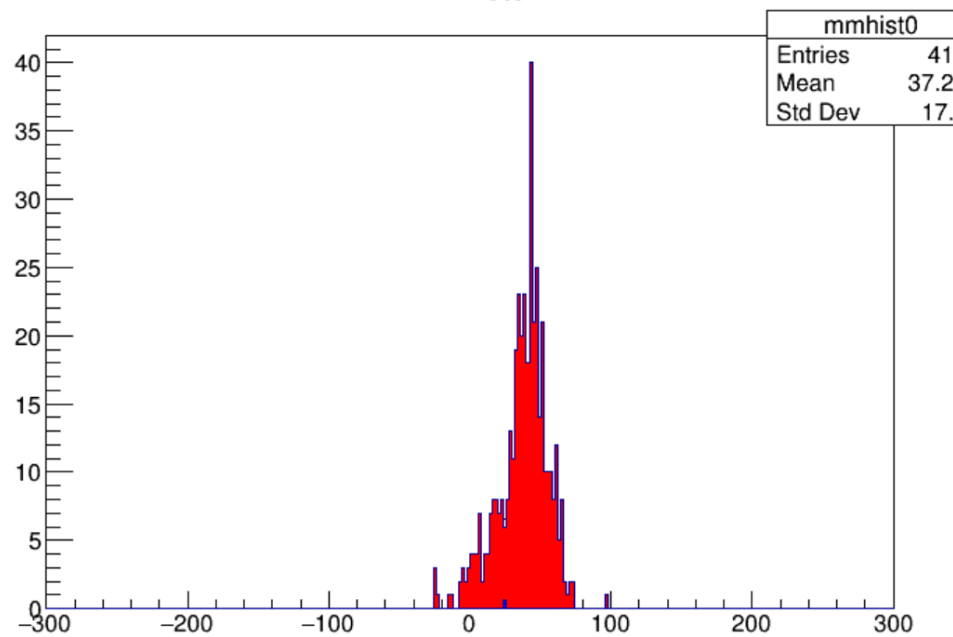
Target: T2, Kinematics: T2

h\_MM



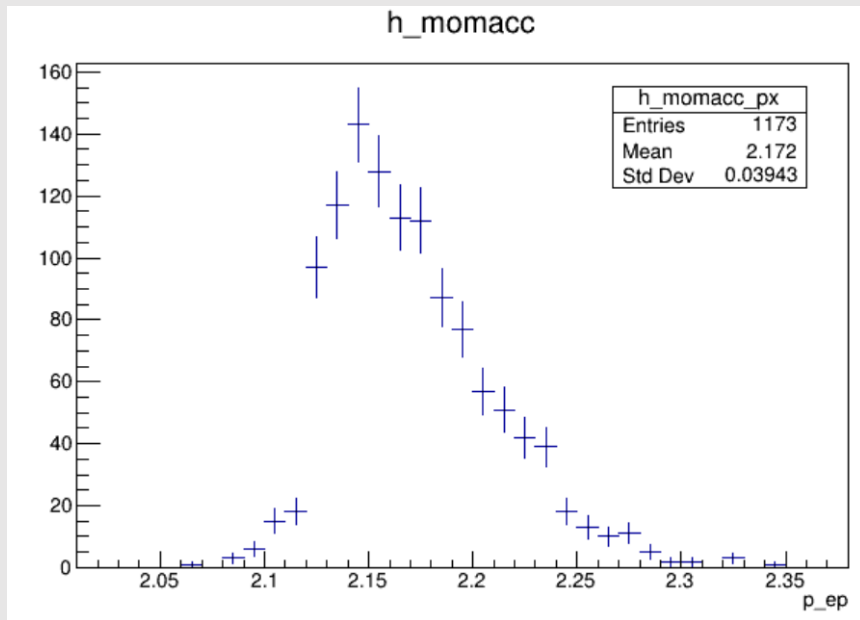
data

mmhist0

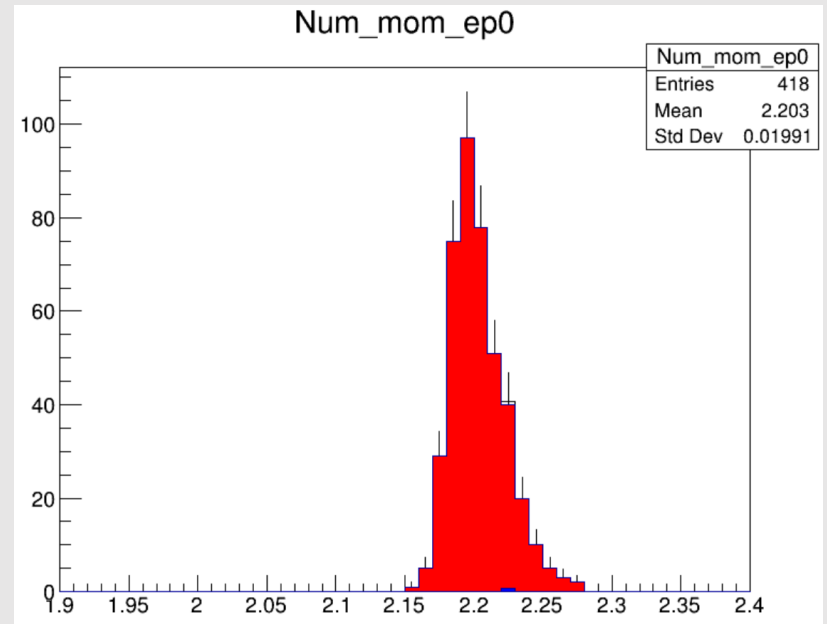


sim

Target: T2, Kinematics: T2

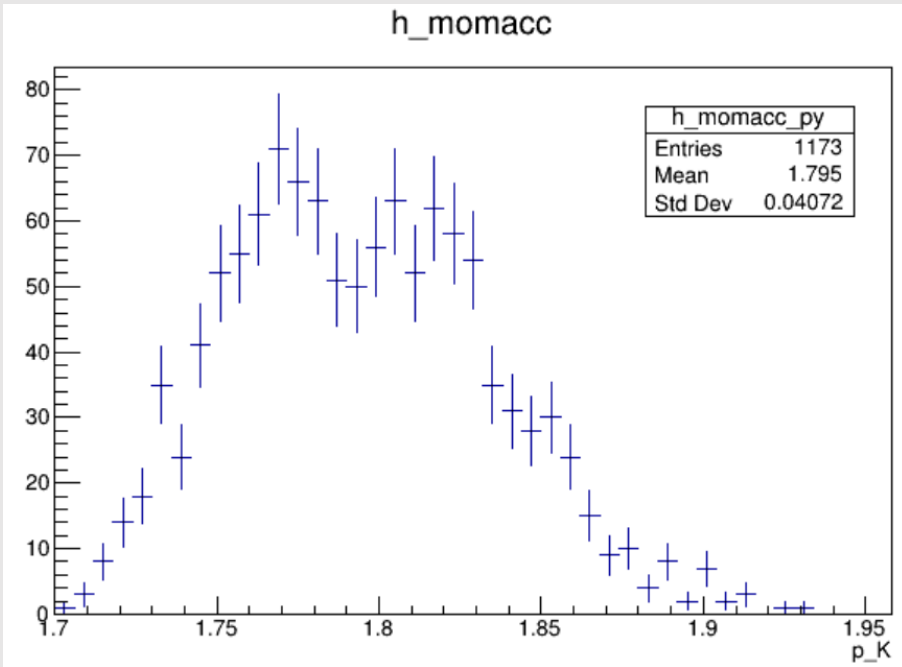


data

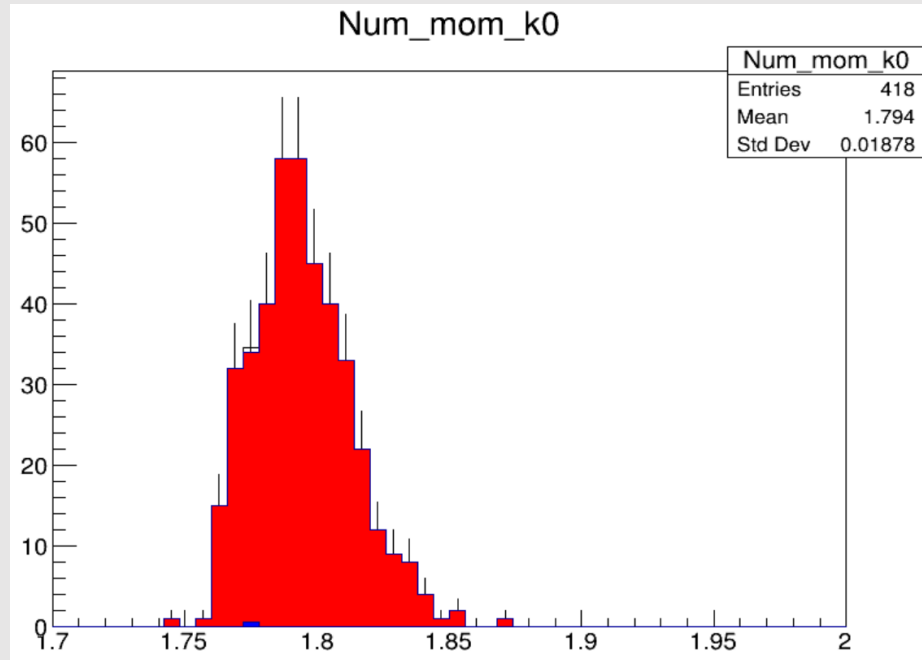


sim

Target: T2, Kinematics: T2



data



sim

dataと比較すると低運動量側を拾えていないように見える

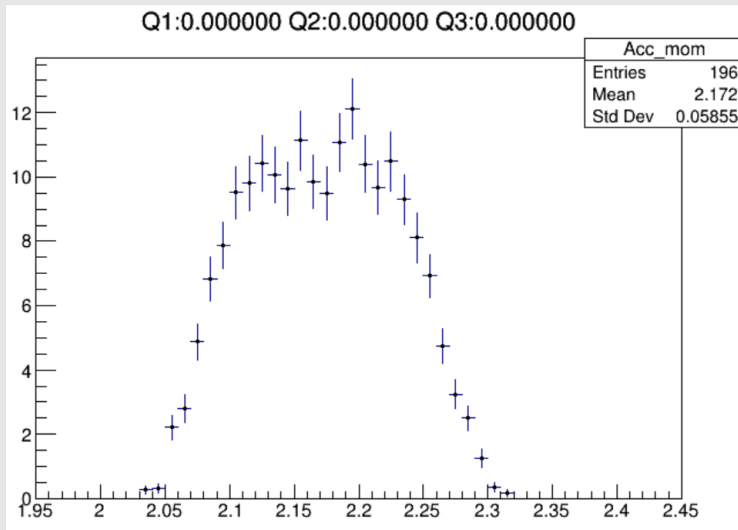


ともに30 MeVずつ下げしてみる

No physics, distribution is random

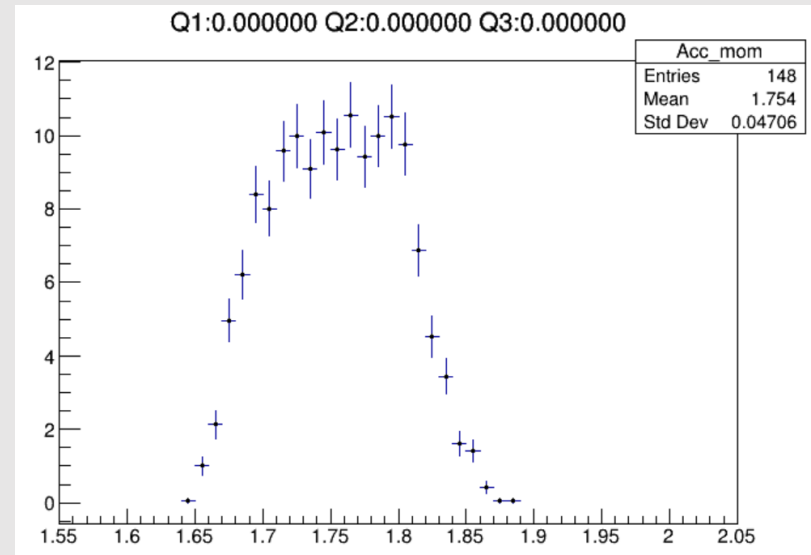
DMAP: 0.7008  
 Q1: -0.056314286  
 Q2: 0.017728571 (e2.1GeVを基準)  
 Q3: 0.016389220 (2.19GeVを想定)

DMAP: -0.5664  
 Q1: 0.045514286  
 Q2: -0.014328571 (e2.1GeVを基準にした)  
 Q3: -0.013246082 (1.77GeVを想定)



sim

nml\_zras\_Tkine\_20200301\_2.root



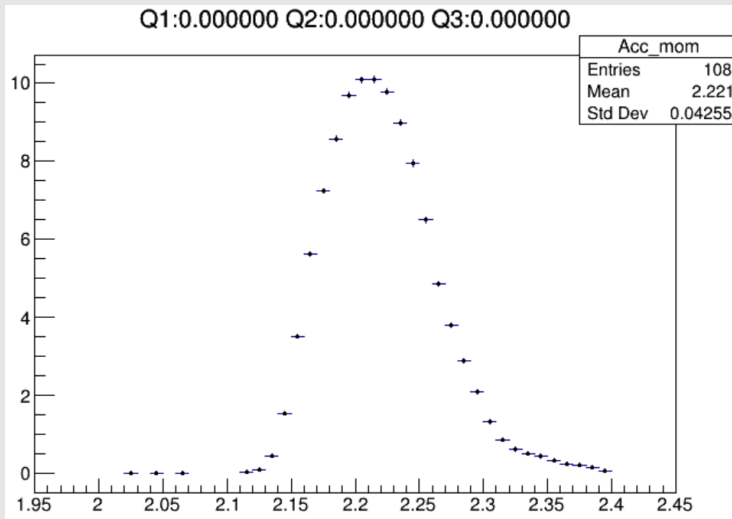
sim

nml\_zras\_Tkink\_20200301\_2.root

physics, distribution is physics

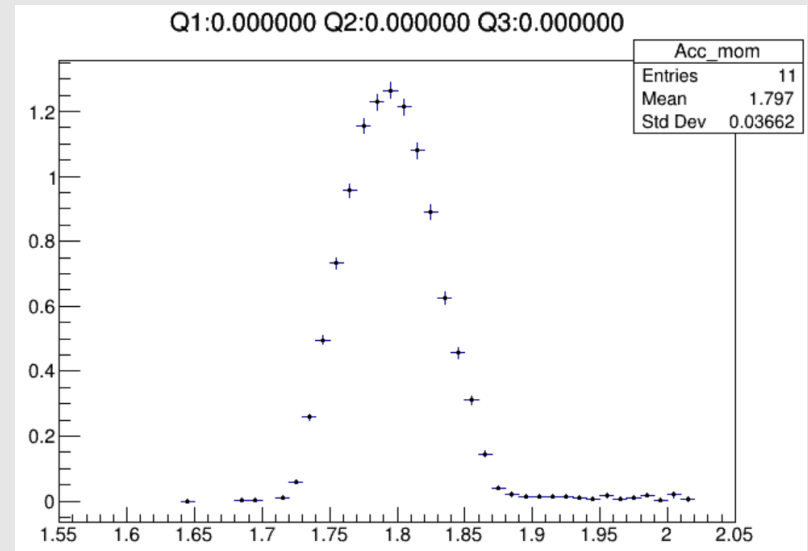
DMAP: 0.7008  
 Q1: -0.056314286  
 Q2: 0.017728571 (e2.1GeVを基準)  
 Q3: 0.016389220 (2.19GeVを想定)

DMAP: -0.5664  
 Q1: 0.045514286  
 Q2: -0.014328571 (e2.1GeVを基準にした)  
 Q3: -0.013246082 (1.77GeVを想定)



sim

tempe.root



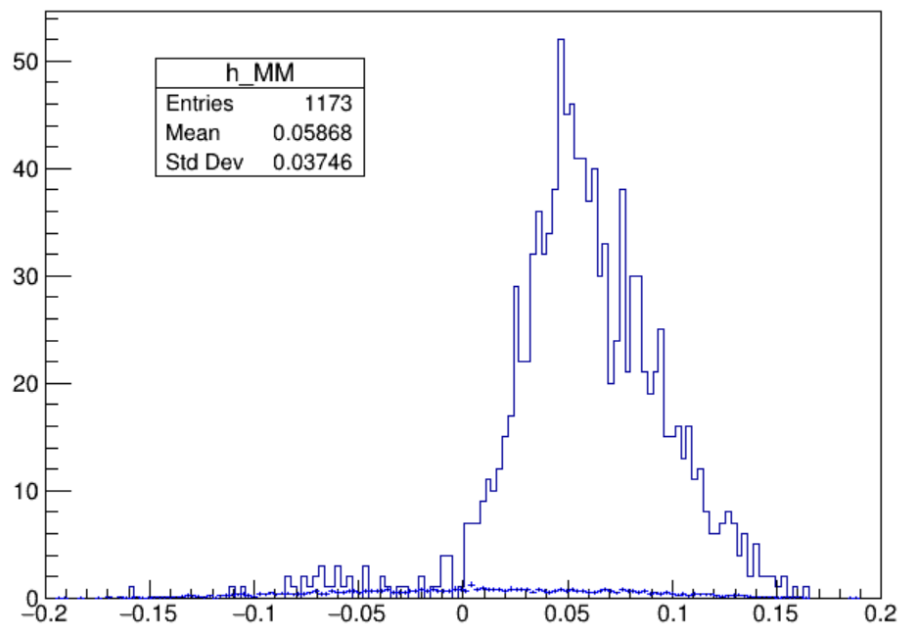
sim

tempk.root

Target: T2, Kinematics: T2

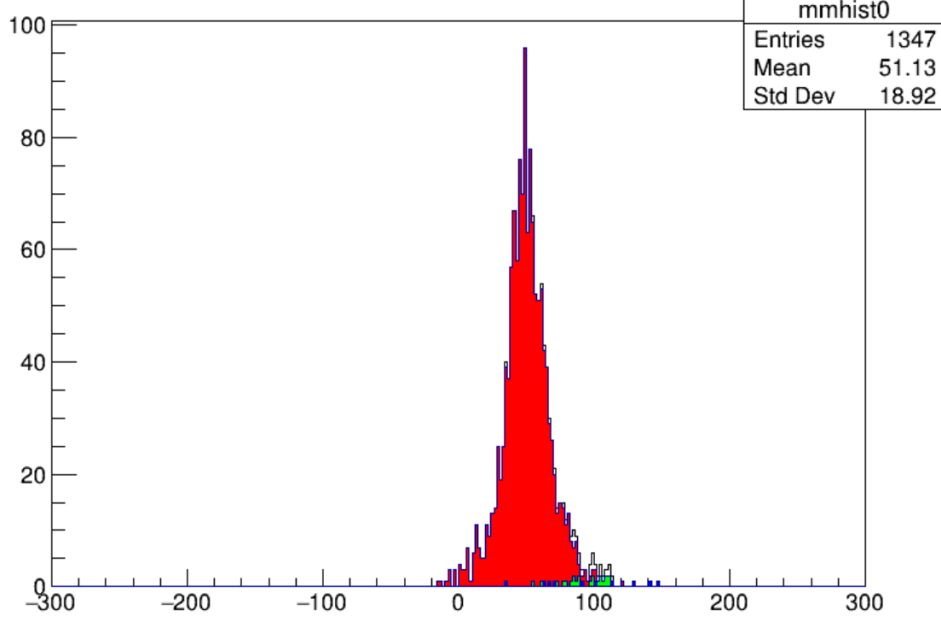
1:1:1

h\_MM



data

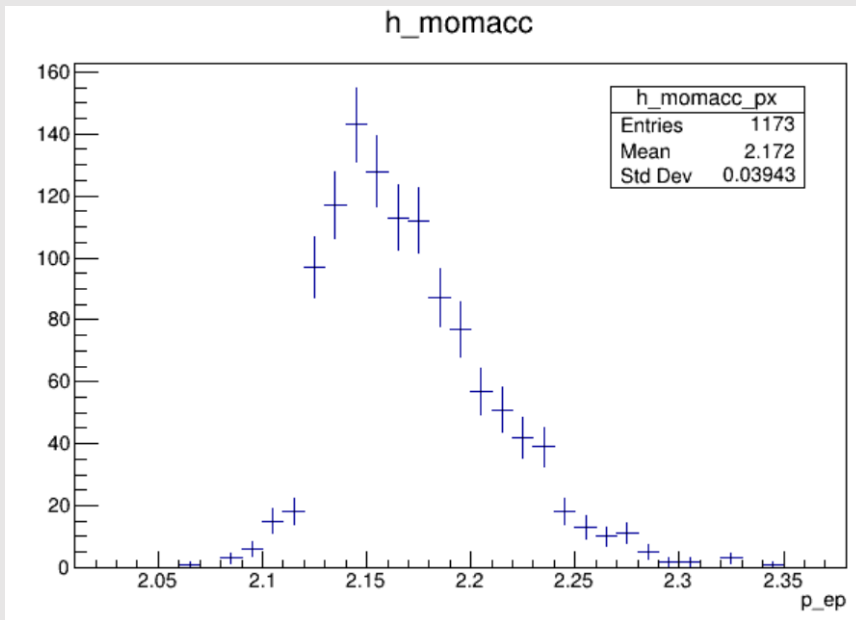
mmhist0



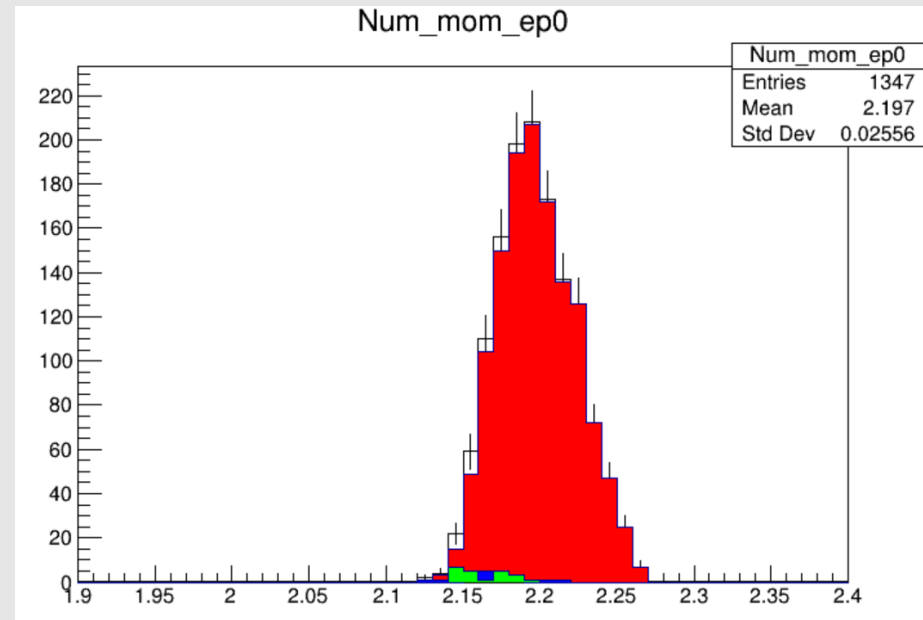
sim



Target: T2, Kinematics: T2

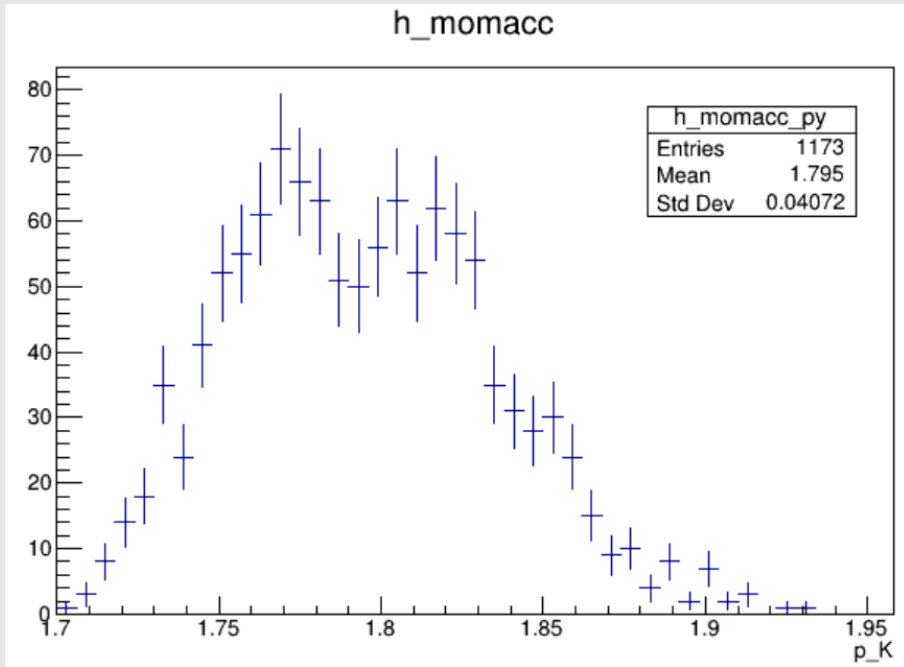


data

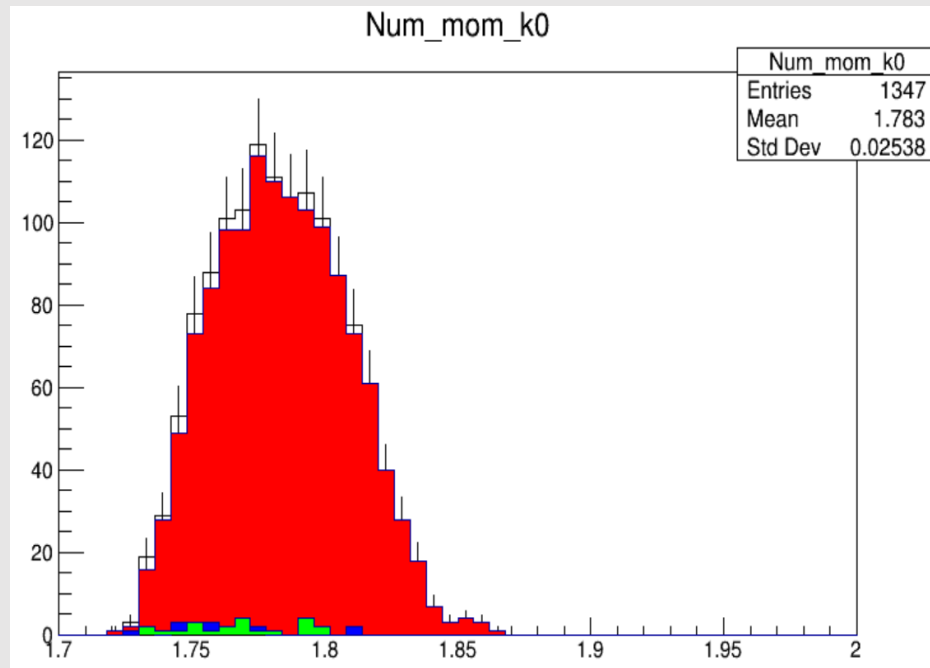


sim

Target: T2, Kinematics: T2



data



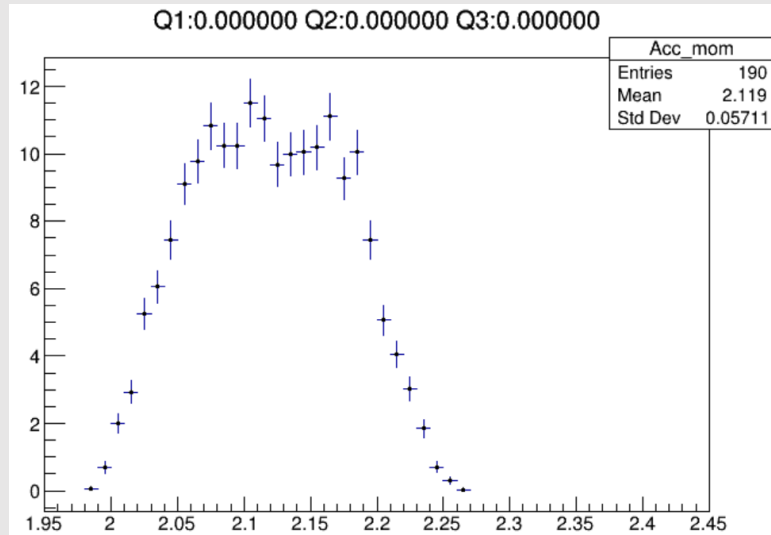
sim

それぞれさらに50MeVずつさげてみる

No physics, distribution is random

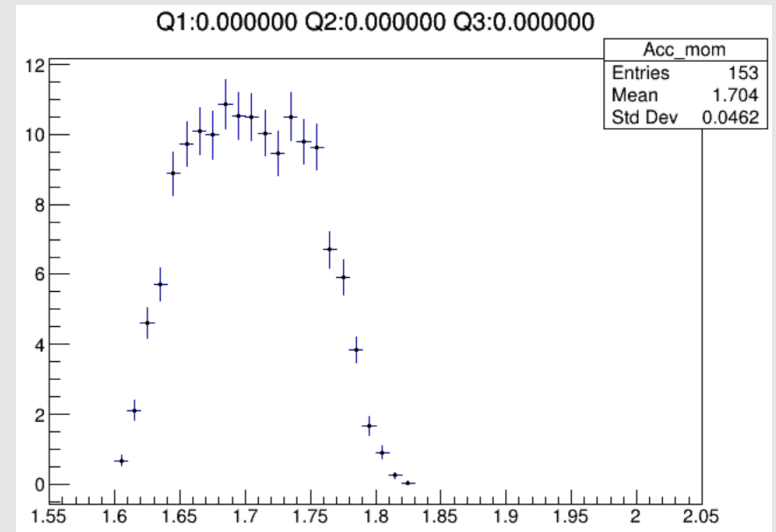
DMAP: 0.684  
 Q1: -0.055028571  
 Q2: 0.017323810 (e2.1GeVを基準  
 Q3: 0.016015036 2.14GeVを想定)

DMAP: -0.5504  
 Q1: 0.044228571  
 Q2: -0.01392381 (e2.1GeVを基準にした  
 Q3: -0.012871898 1.72GeVを想定)



sim

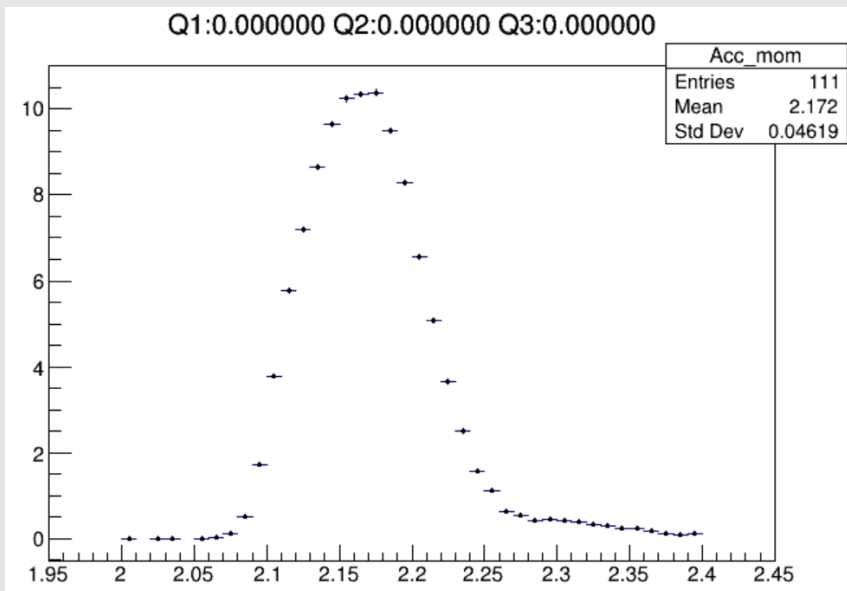
nnl\_zras\_Tkine\_20200301\_3.root



sim

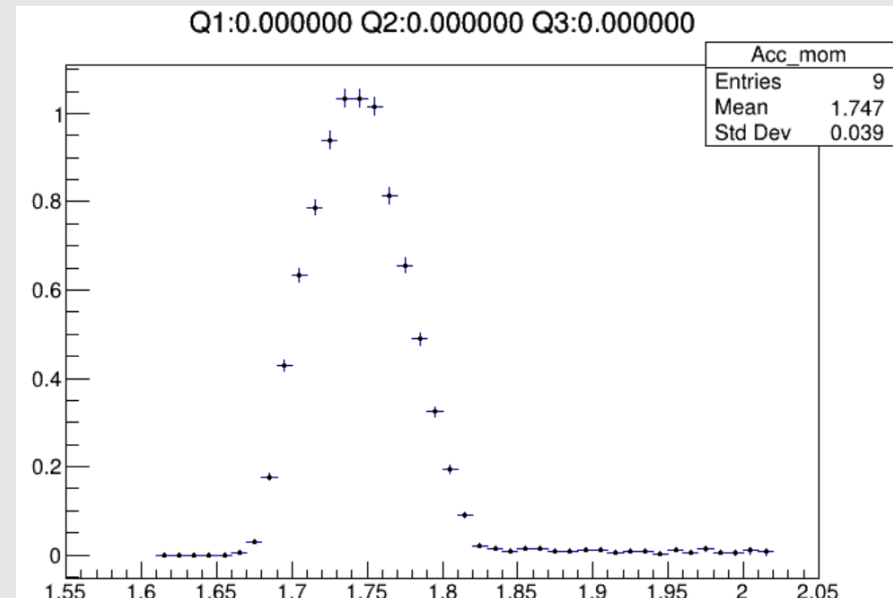
nnl\_zras\_Tkink\_20200301\_3.root

physics, distribution is physics



sim

tempe.root

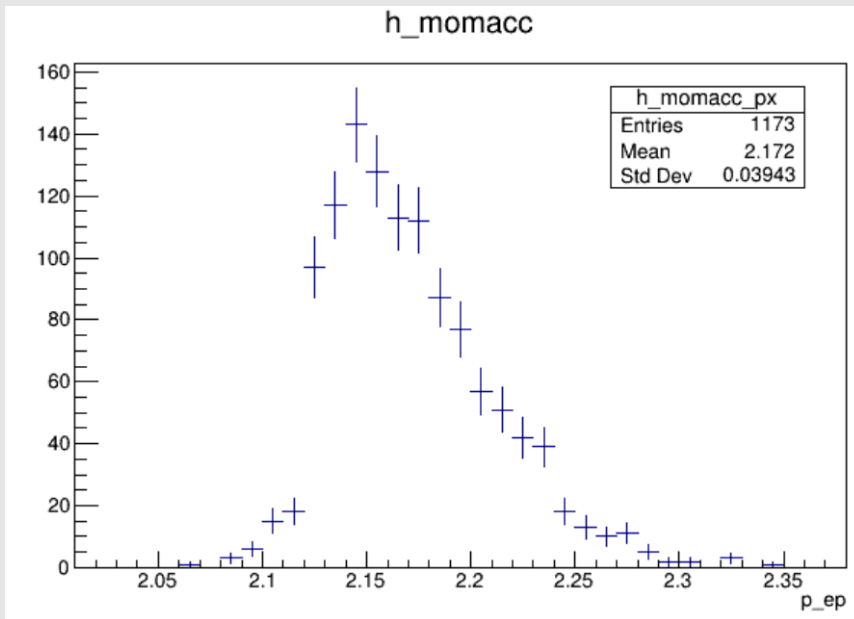


sim

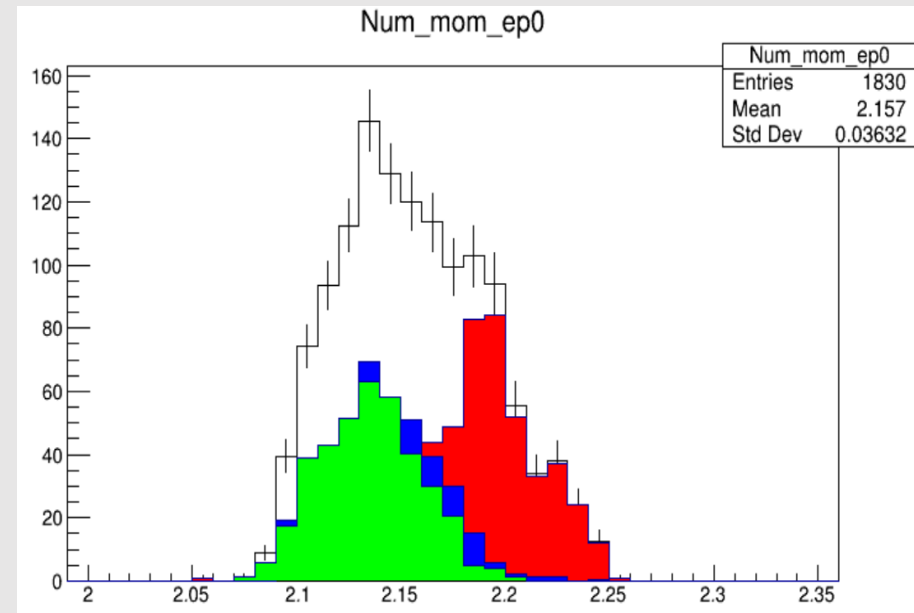
tempk.root

Target: T2, Kinematics: T2

1:0.6:0.6



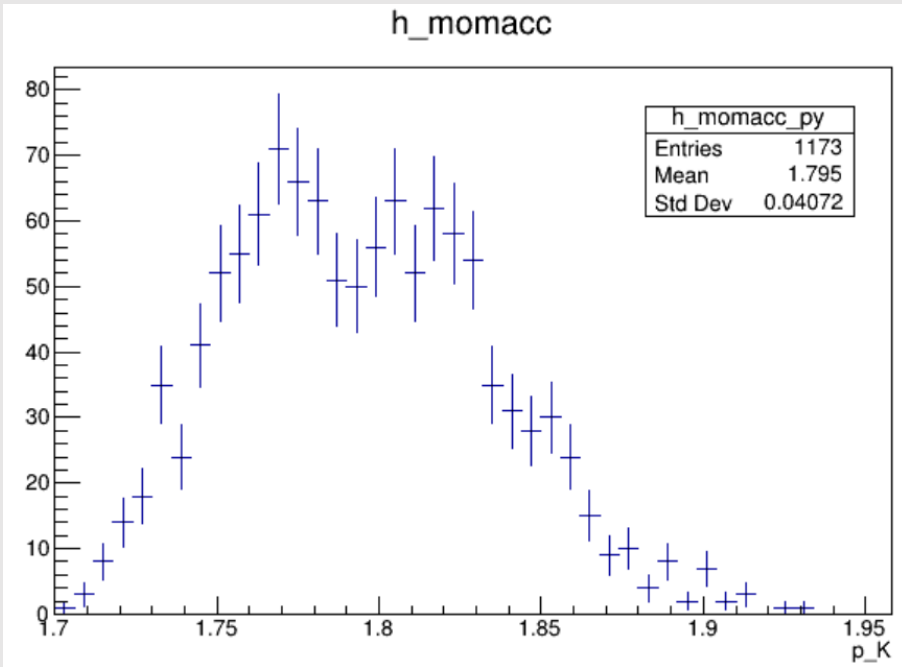
data



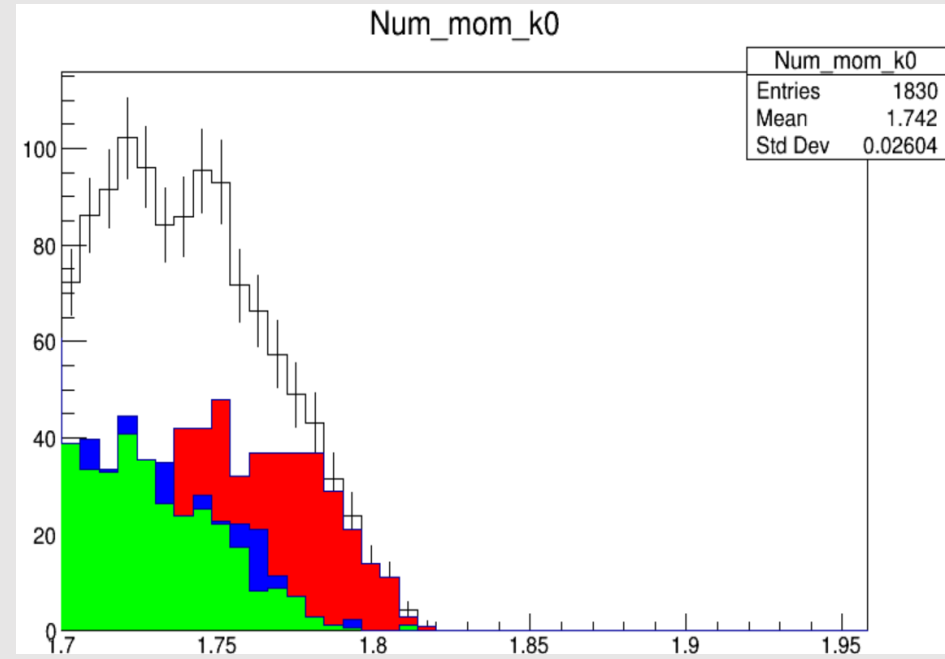
sim

Target: T2, Kinematics: T2

1:0.6:0.6



data



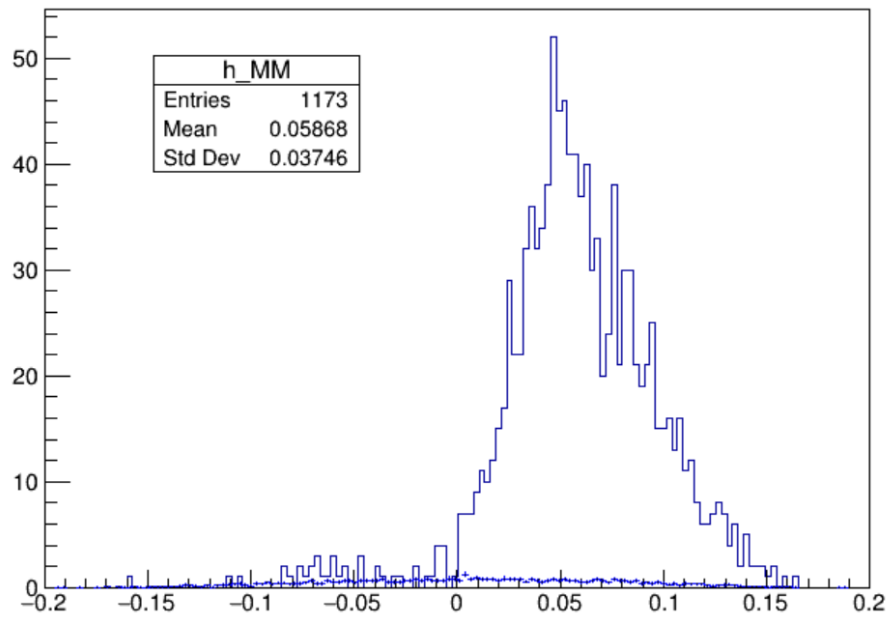
sim

Target: T2, Kinematics: T2

t2tar\_t2kin\_20200301\_3rd.root

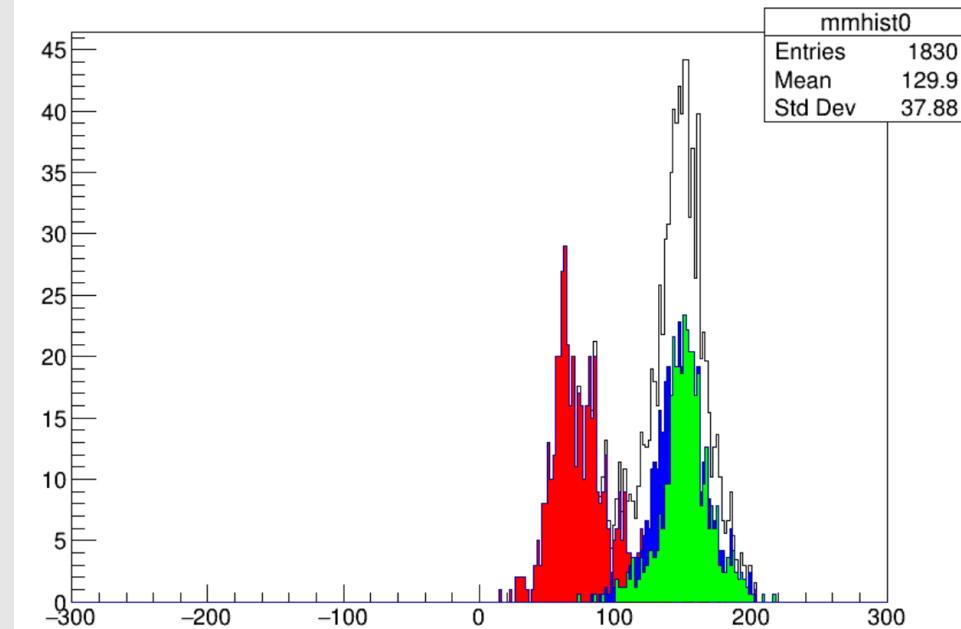
1:0.6:0.6

h\_MM



data

mmhist0



sim



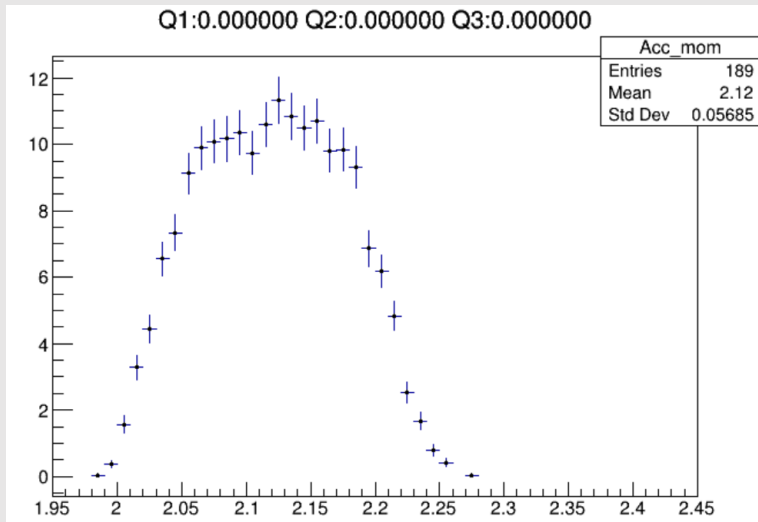
ひとまず、eは今の値で良いとする(これが2.22GeVに相当と考える)  
となると、kaonのDMAPは $0.684 * (1.82 / 2.22) = 0.56075676$

これは今までの2.1 GeV基準で考えると1.7544144GeV相当

No physics, distribution is random

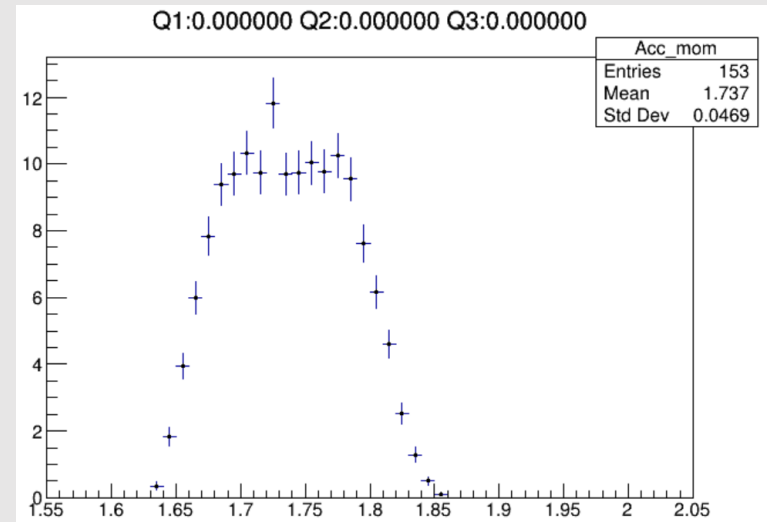
DMAP: 0.684  
 Q1: -0.055028571  
 Q2: 0.017323810 (e2.1GeVを基準)  
 Q3: 0.016015036 2.14GeVを想定)

DMAP: -0.56075675  
 Q1: 0.045113513  
 Q2: -0.014202402 (e2.1GeVを基準にした)  
 Q3: -0.01312944 1.7544144GeVを想定)



sim

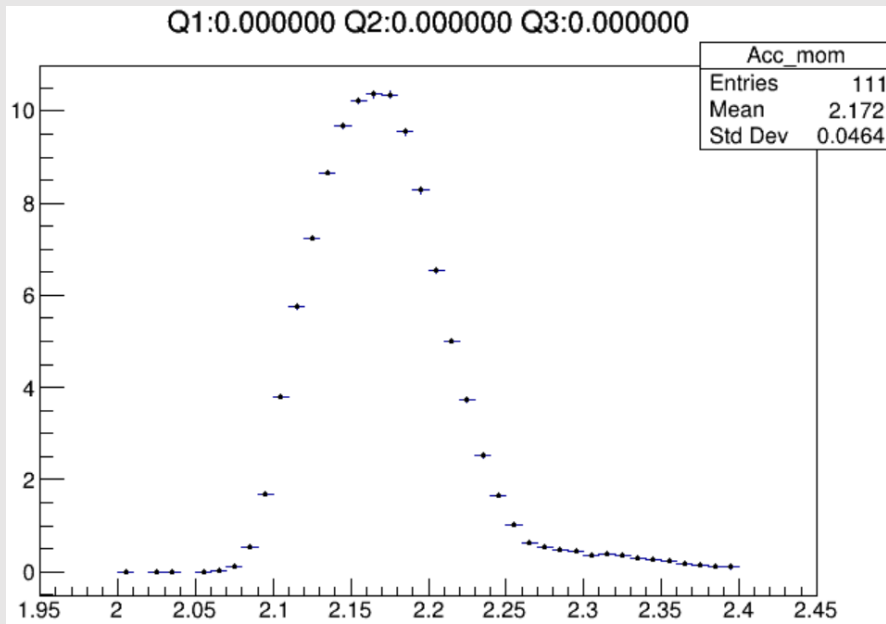
nnl\_zras\_Tkine\_20200301\_4.root



sim

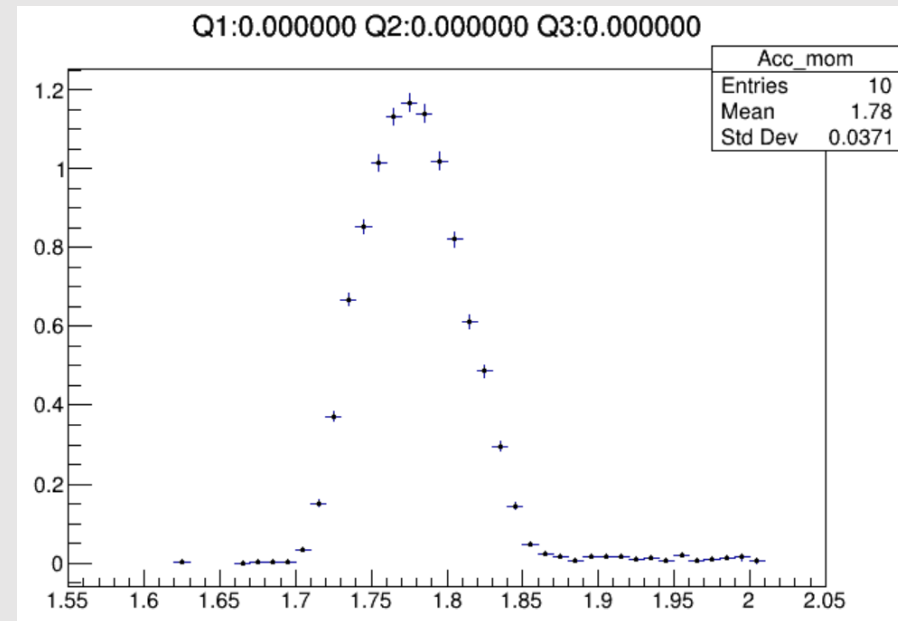
nnl\_zras\_Tkink\_20200301\_4.root

physics, distribution is physics



sim

tempe.root

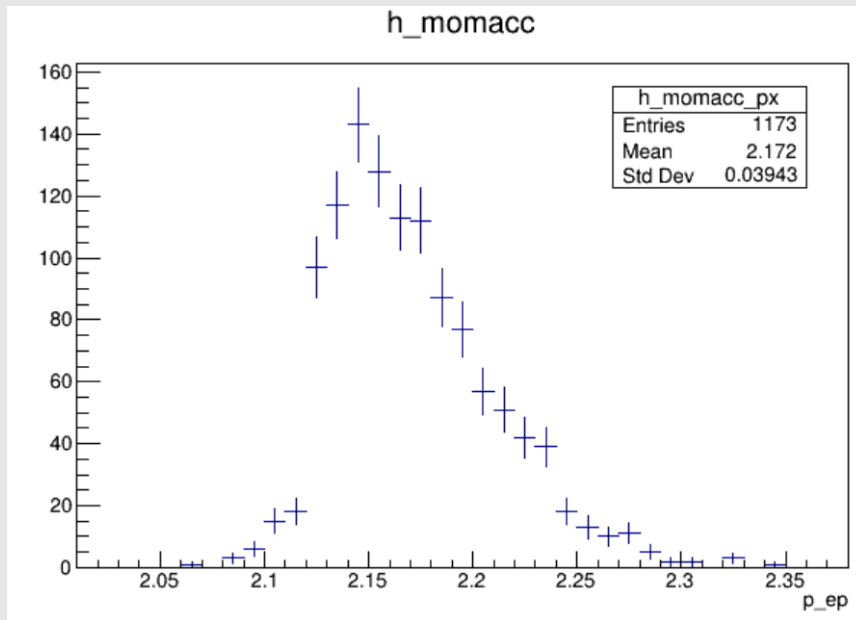


sim

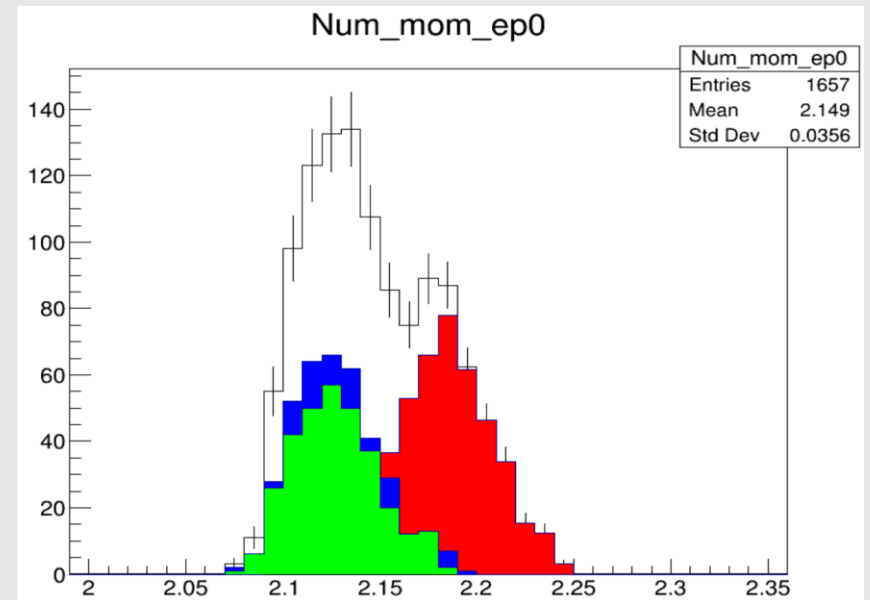
tempk.root

Target: T2, Kinematics: T2

0.4:1:1



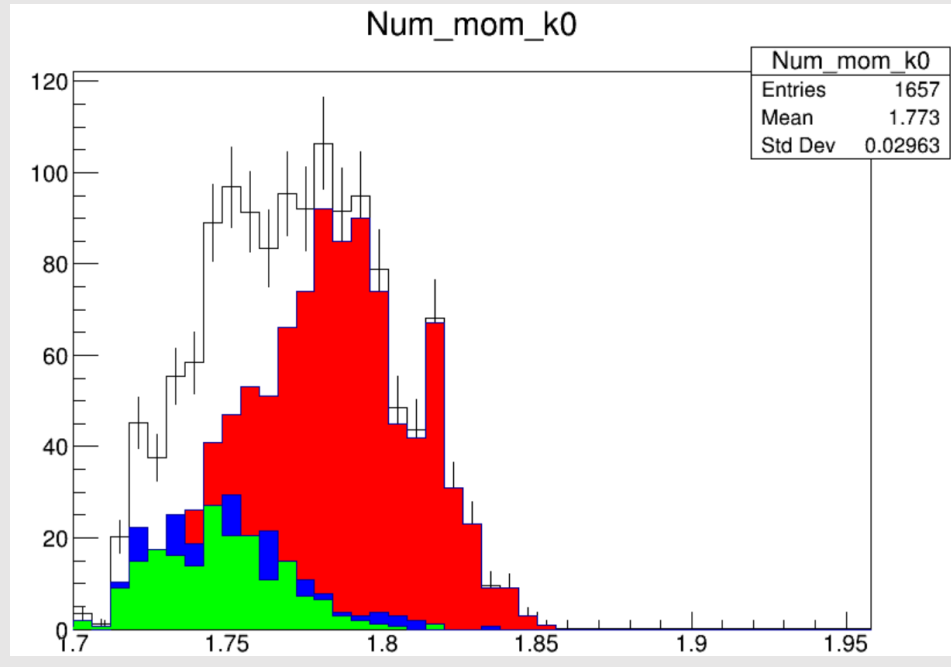
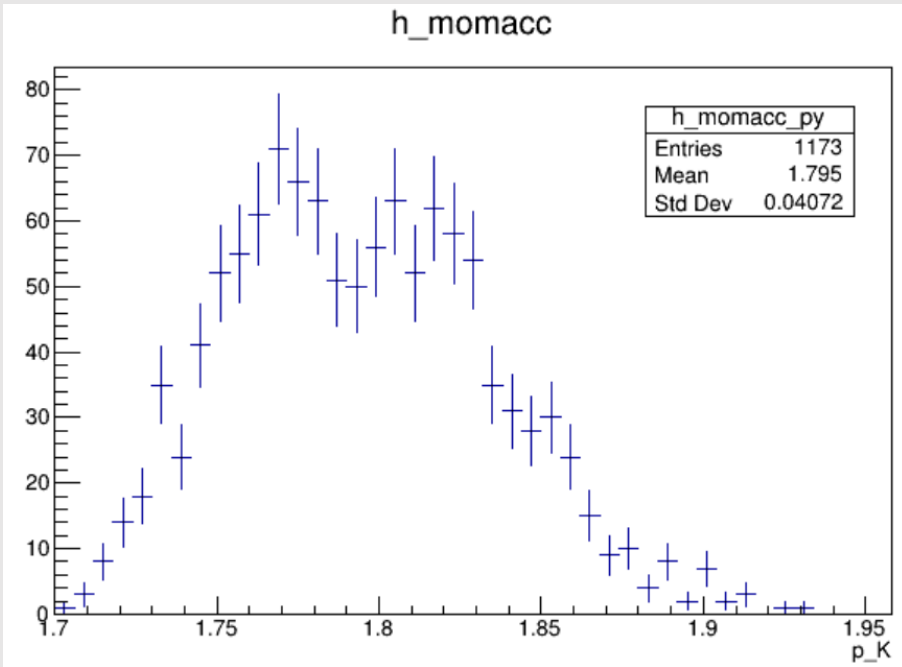
data



sim

Target: T2, Kinematics: T2

1:0.6:0.6



data

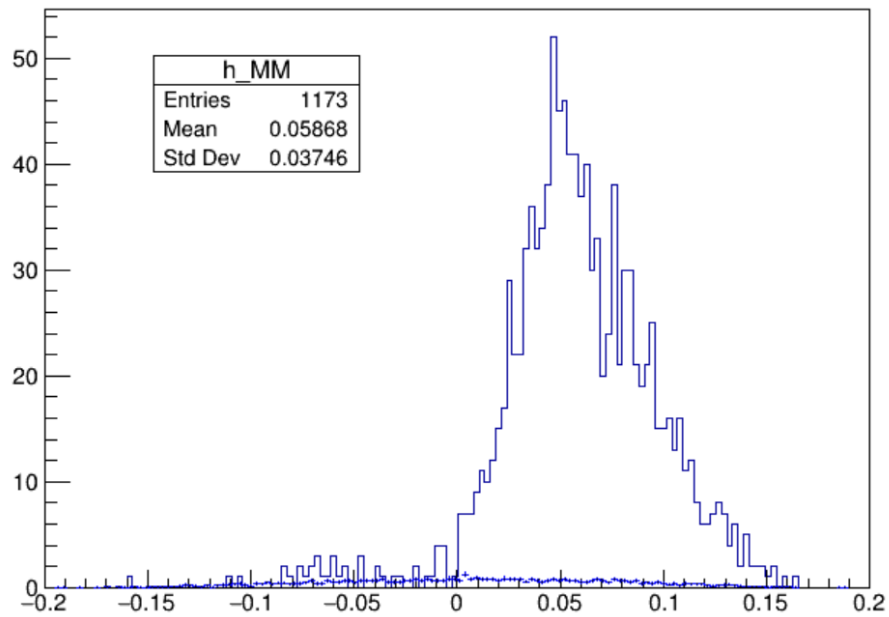
sim

Target: T2, Kinematics: T2

t2tar\_t2kin\_20200301\_4th.root

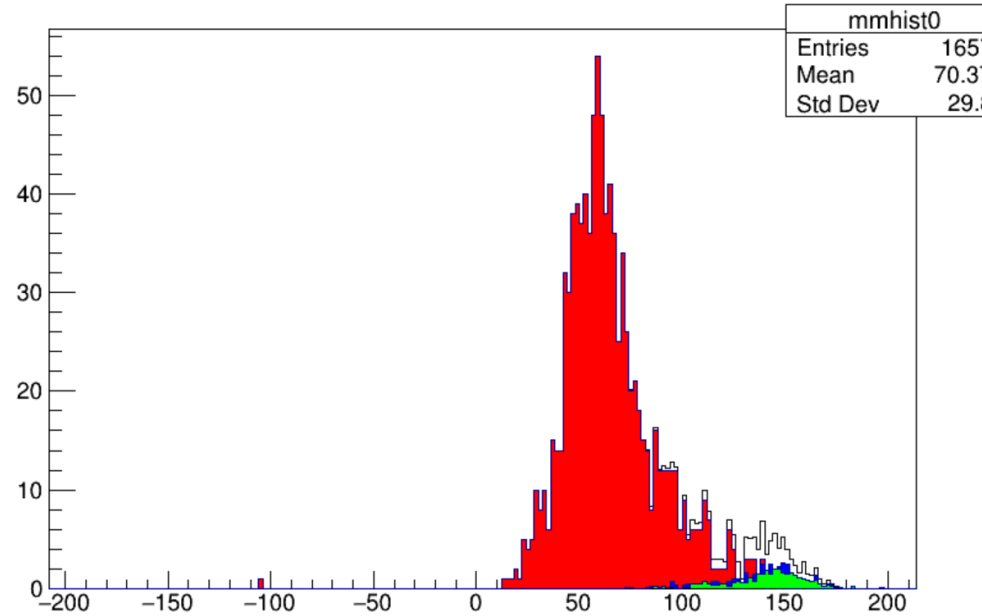
1:0.1:0.1

h\_MM



data

mmhist0



sim

もうちょっと軽いものをみたいー>磁場強くする

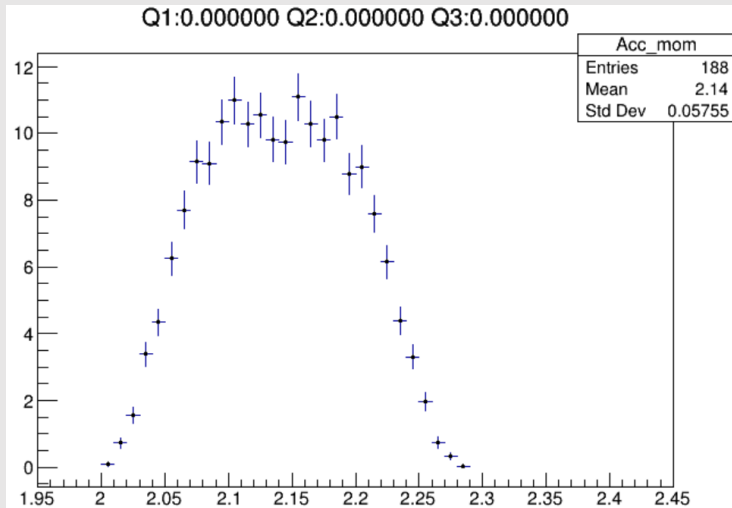
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No physics, distribution is random

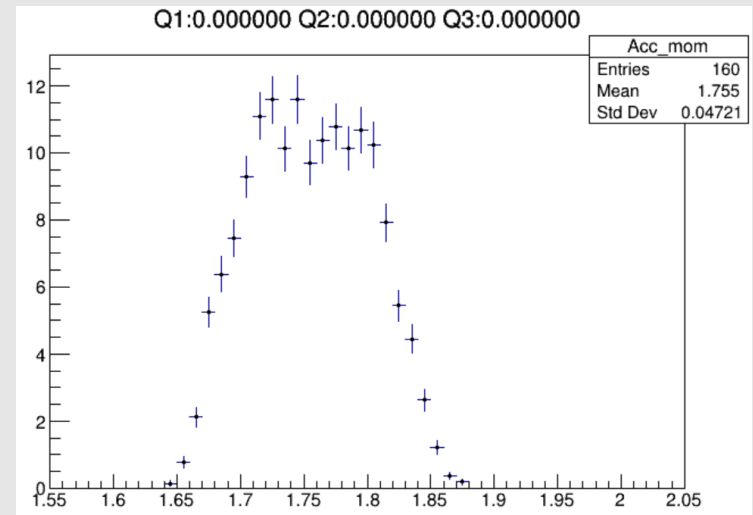
DMAP: 0.69088352  
 Q1: -0.055517426  
 Q2: 0.017477708 (e2.1GeVを基準  
 Q3: 0.016157308 2.1590110GeVを想定)

DMAP: -0.5664  
 Q1: 0.045514286  
 Q2: -0.014328571 (e2.1GeVを基準にした  
 Q3: -0.013246082 1.77GeVを想定)



sim

nnl\_zras\_Tkine\_20200301\_5.root

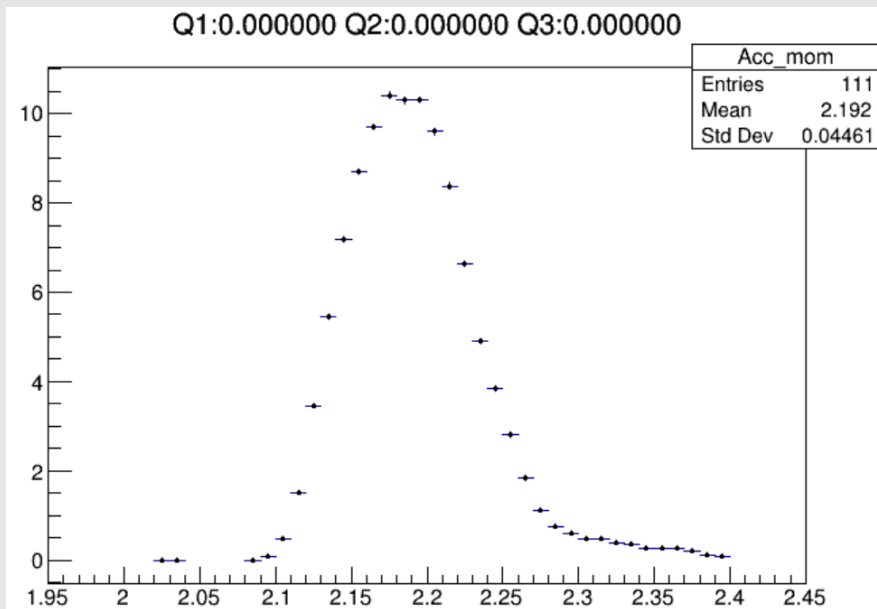


sim

nnl\_zras\_Tkink\_20200301\_5.root

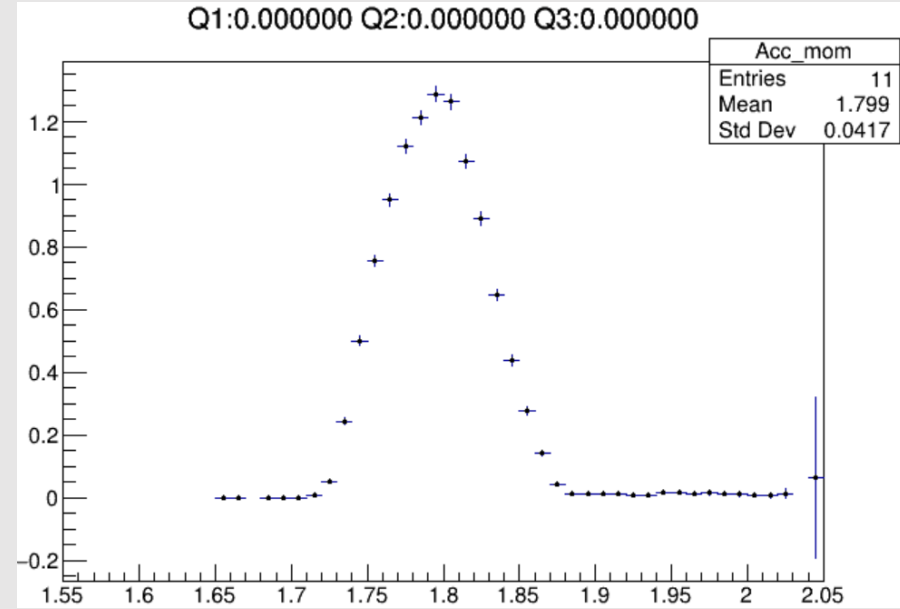


physics, distribution is physics



sim

tempe.root

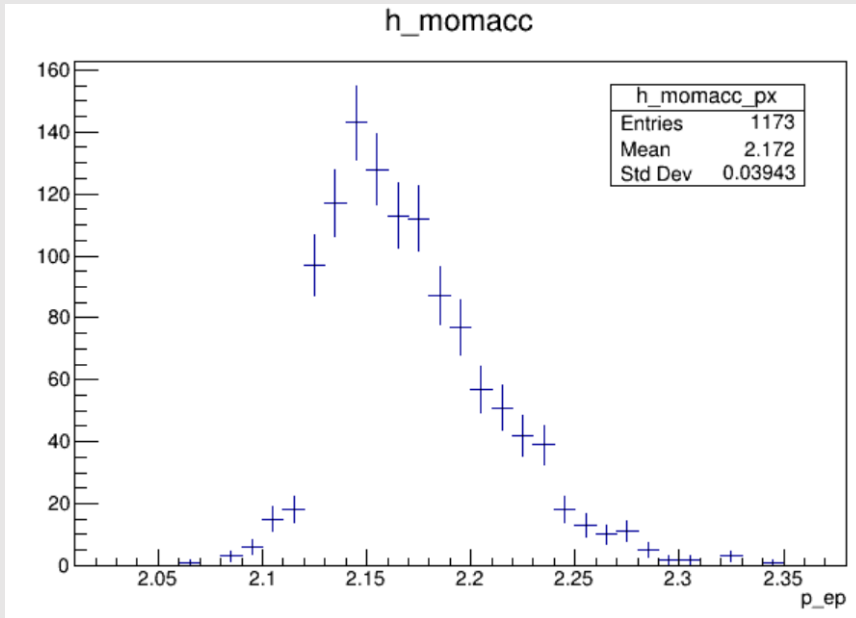


sim

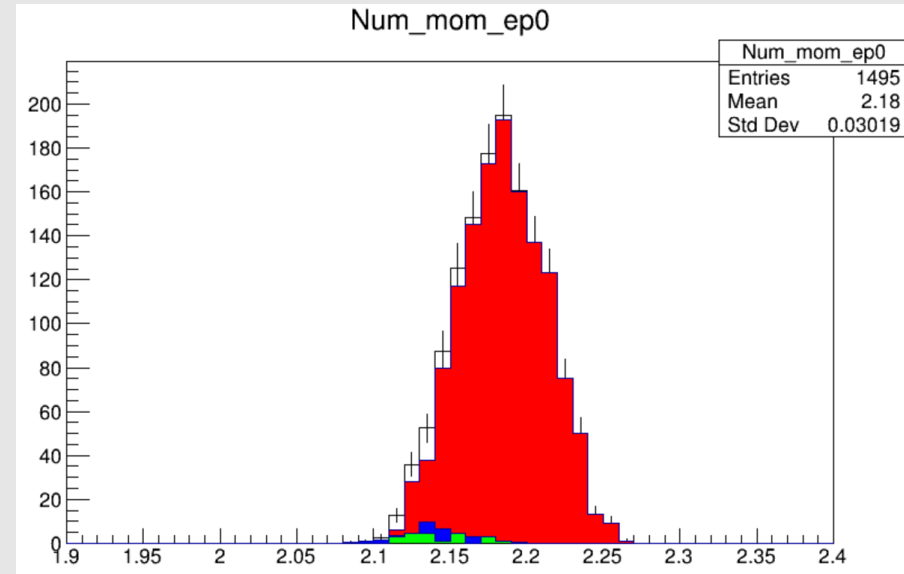
tempk.root

Target: T2, Kinematics: T2

1:0.4:0.4



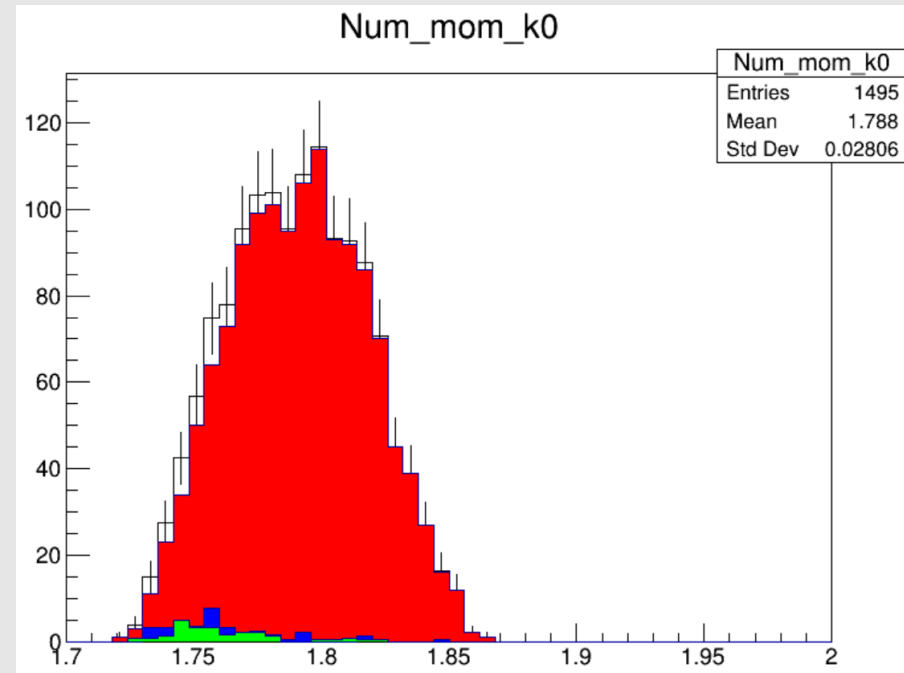
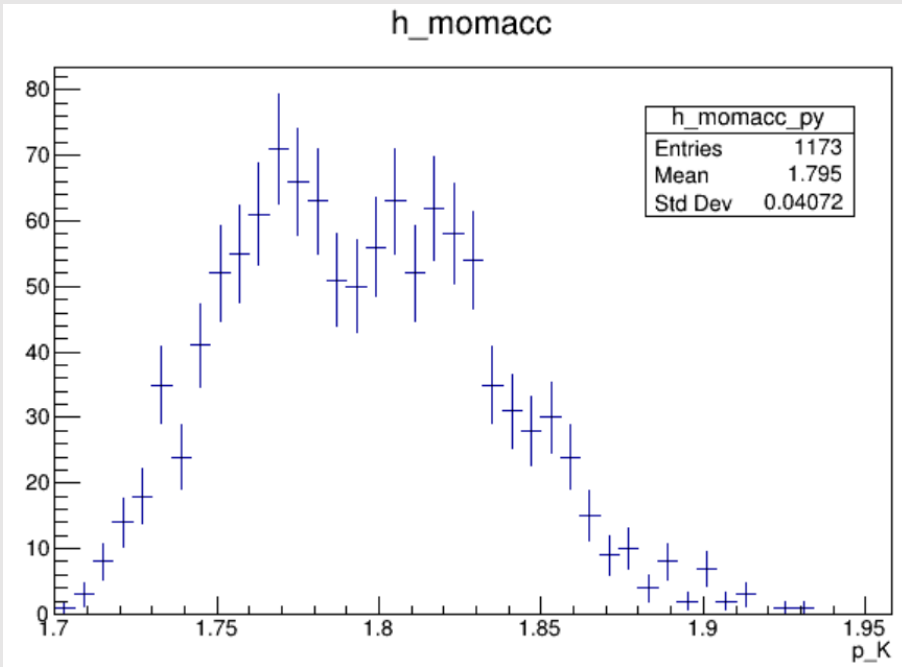
data



sim

Target: T2, Kinematics: T2

1:0.4:0.4



data

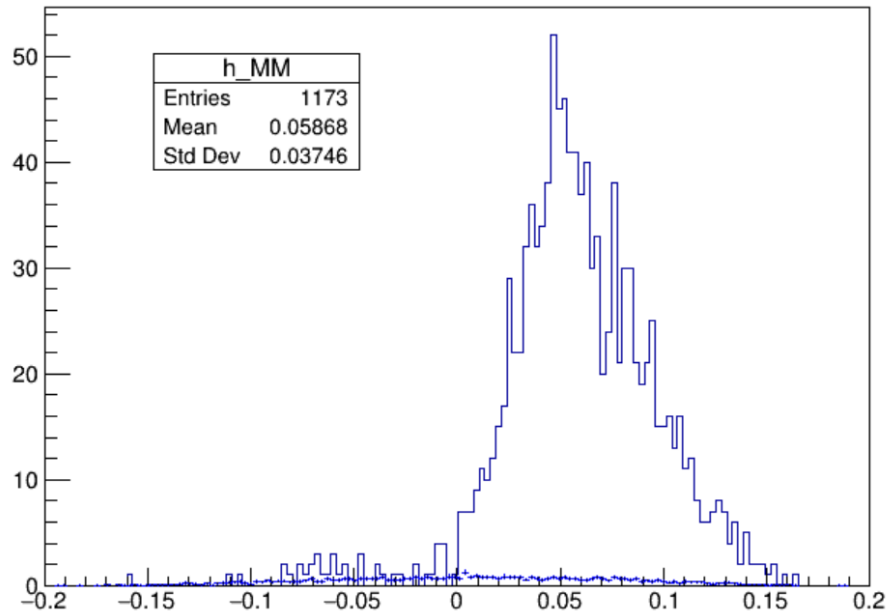
sim

Target: T2, Kinematics: T2

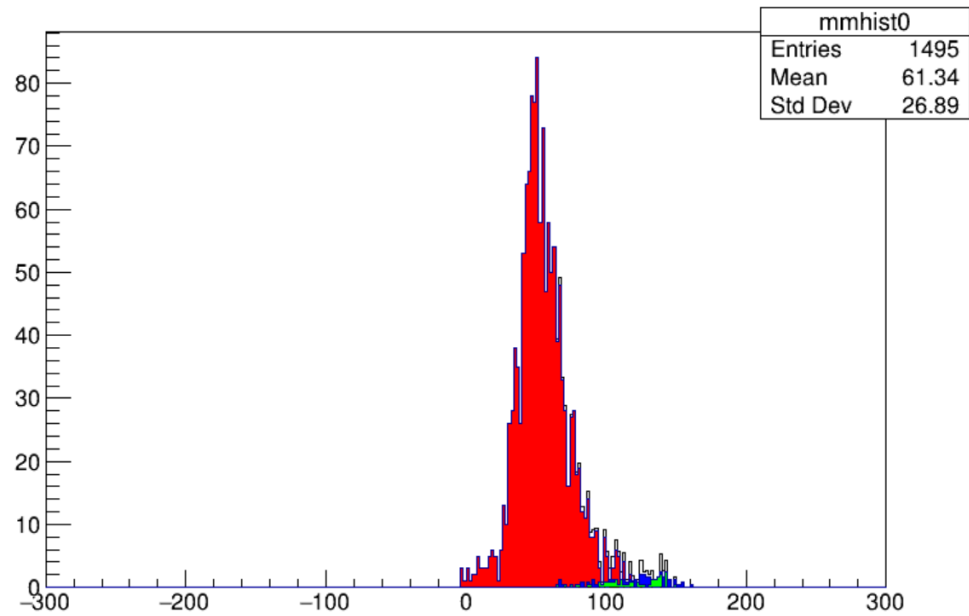
t2tar\_t2kin\_20200301\_5th.root

1:0.4:0.4

h\_MM



mmhist0



data

sim