

P_T Distribution From Monte Carlo Samples

Slide 1

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RIKEN Radiation Laboratory
Apr. 11, 2019 @ 9 pm JST

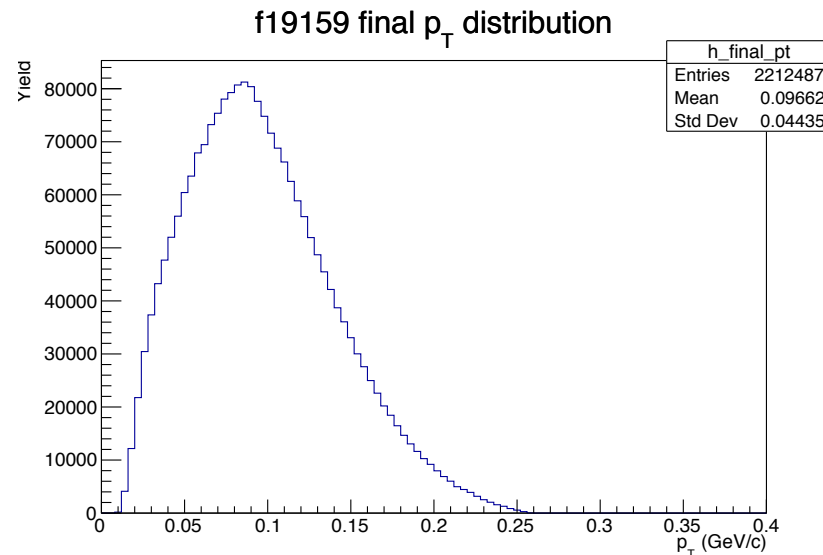
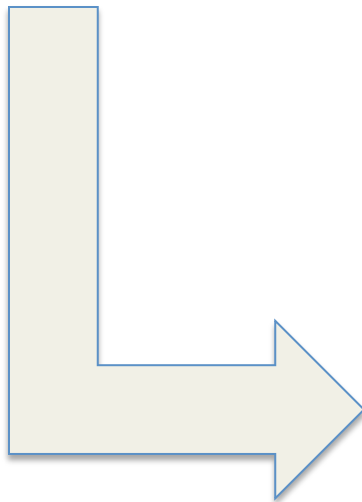
Monte Carlo Simulation Samples

Slide 2

- ① UPC samples (Electromagnetic)
- ② PYTHIA samples (Hadronic)
- ③ DPMJET samples (Hadronic)

Sample combinations to produce P_T data distribution:

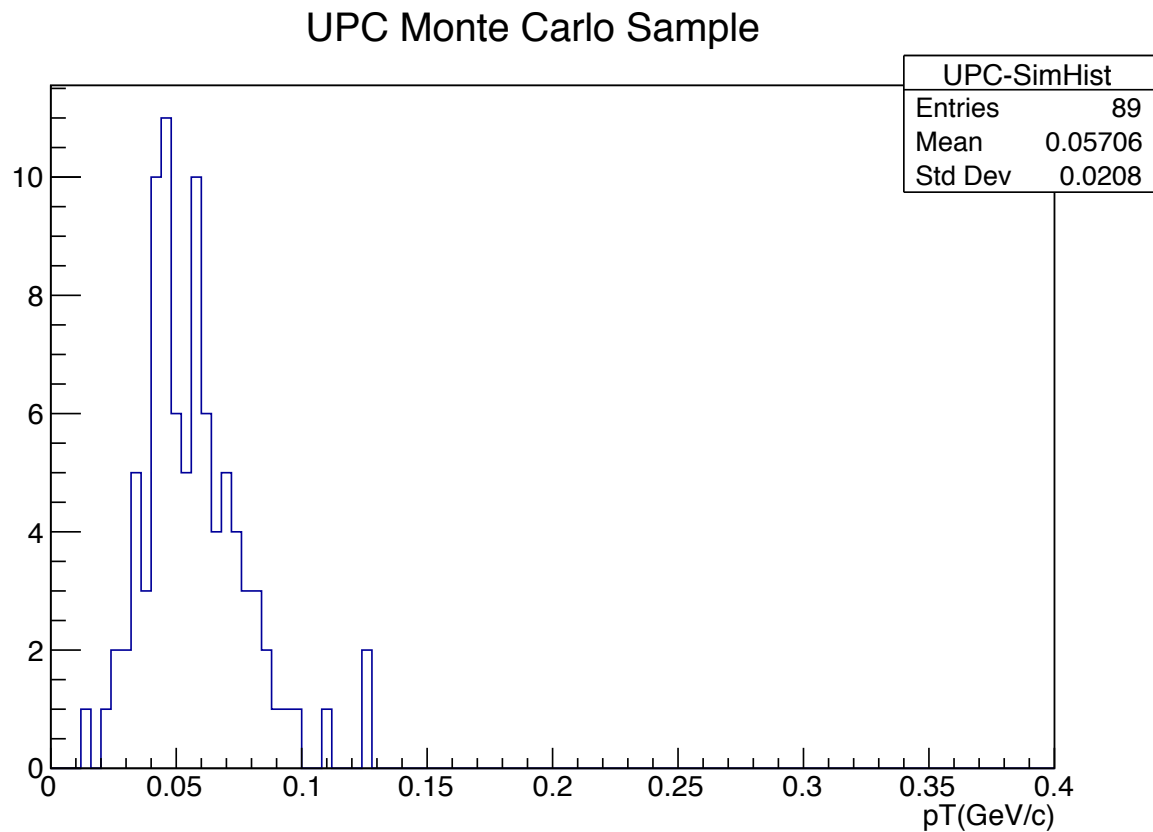
- UPC + PYTHIA (EM + Had)
- UPC + DPMJET (EM + Had)



P_T Distribution (UPC MC Samples)

Slide 3

P_T distribution from a single UPC sample:



P_T Distribution (UPC MC Samples)

Slide 4

All available UPC samples (1212):

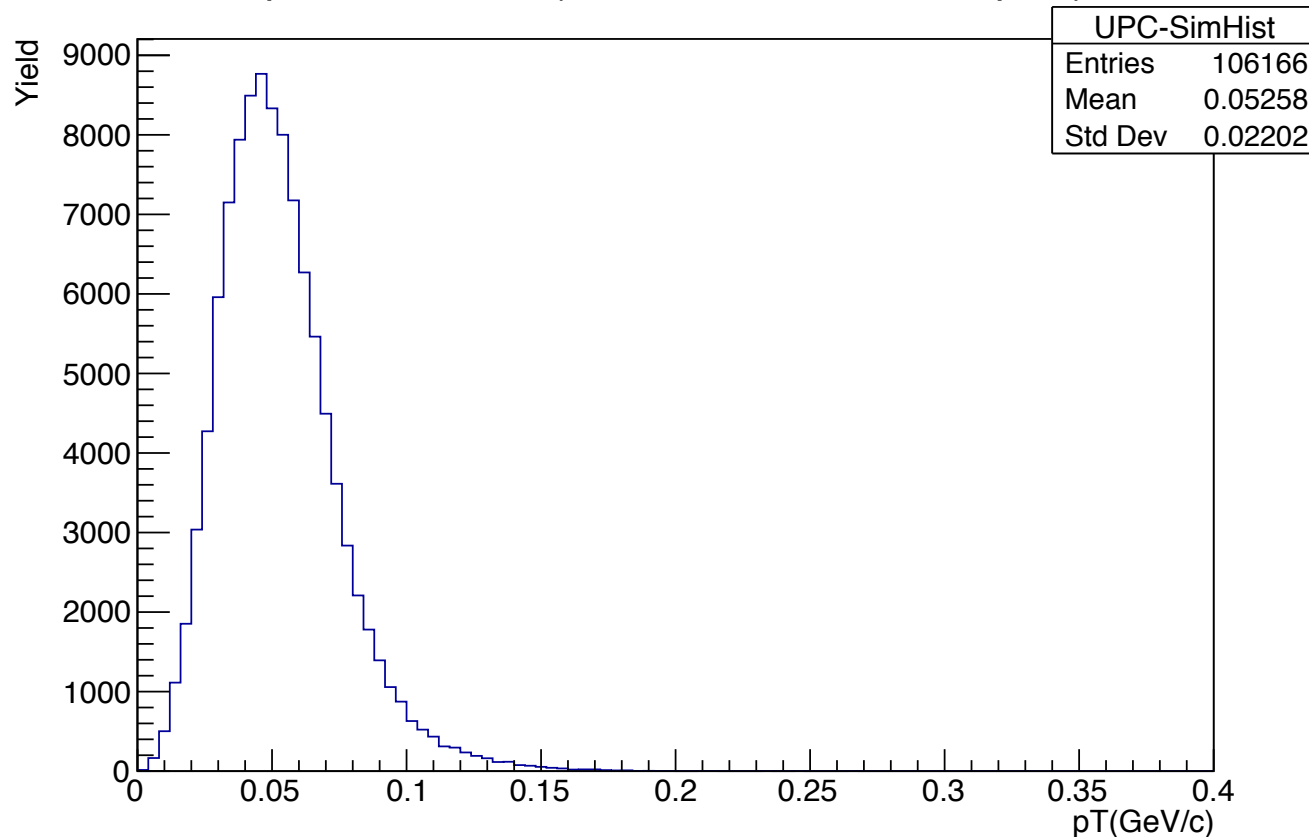
```
[benardmulilo [work] $ cd UPC
[benardmulilo [UPC] $ ls
000011.root      000609.root      000975.root      001299.root      001655.root
000022.root      000613.root      000976.root      001300.root      001658.root
000027.root      000614.root      000977.root      001303.root      001659.root
000030.root      000615.root      000978.root      001304.root      001660.root
000031.root      000616.root      000979.root      001309.root      001661.root
000035.root      000617.root      000980.root      001312.root      001662.root
000046.root      000619.root      000981.root      001313.root      001663.root
000052.root      000621.root      000982.root      001321.root      001664.root
000053.root      000625.root      000983.root      001324.root      001665.root
000055.root      000632.root      000984.root      001325.root      001666.root
000076.root      000644.root      000985.root      001326.root      001667.root
000077.root      000645.root      000986.root      001327.root      001669.root
000078.root      000646.root      000987.root      001329.root      001671.root
000082.root      000647.root      000988.root      001332.root      001673.root
000085.root      000648.root      000990.root      001333.root      001675.root
000086.root      000649.root      000991.root      001336.root      001676.root
000101.root      000650.root      000992.root      001338.root      001677.root
000102.root      000651.root      000993.root      001339.root      001678.root
000105.root      000652.root      000994.root      001340.root      001680.root
000106.root      000653.root      000995.root      001342.root      001681.root
000107.root      000654.root      000996.root      001343.root      001682.root
000110.root      000655.root      000997.root      001344.root      001690.root
000112.root      000656.root      000998.root      001345.root      001694.root
000124.root      000657.root      000999.root      001346.root      001695.root
000126.root      000658.root      001000.root      001347.root      001696.root
000127.root      000659.root      001001.root      001348.root      001698.root
000128.root      000660.root      001002.root      001349.root      001699.root
000130.root      000662.root      001004.root      001350.root      001700.root
000131.root      000663.root      001005.root      001351.root      001701.root
000140.root      000664.root      001006.root      001352.root      001702.root
000151.root      000665.root      001008.root      001353.root      001703.root
000152.root      000666.root      001009.root      001354.root      001704.root
000154.root      000667.root      001010.root      001355.root      001705.root
000155.root      000668.root      001011.root      001356.root      001706.root
000156.root      000669.root      001012.root      001357.root      001707.root
000157.root      000670.root      001014.root      001358.root      001708.root
```

P_T Distribution (UPC MC Samples)

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Concatenated all available UPC samples (1212 root files) to produce total P_T distribution

p_T Distribution (UPC Monte Carlo Samples)

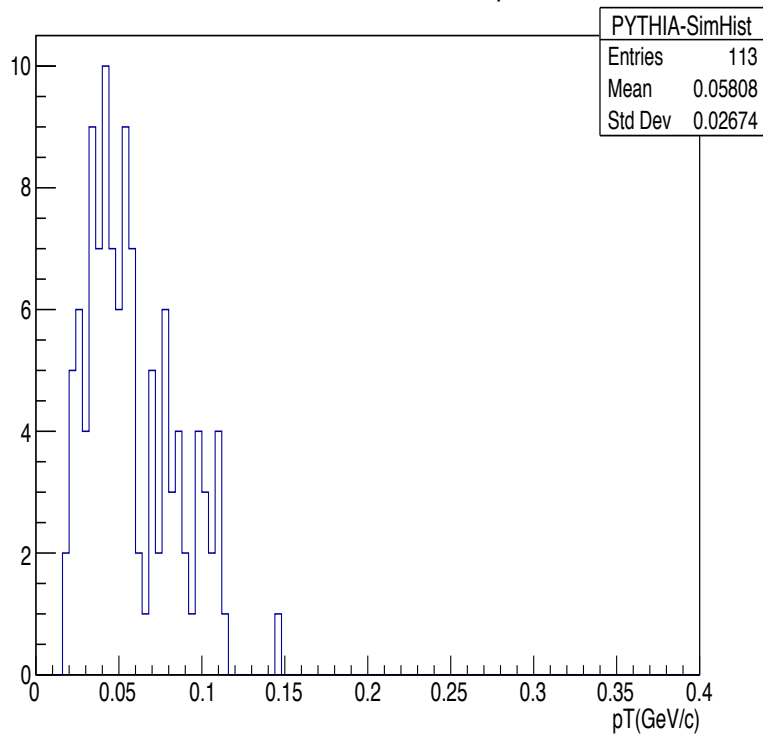


P_T Distribution (PYTHIA MC Samples)

Slide 6

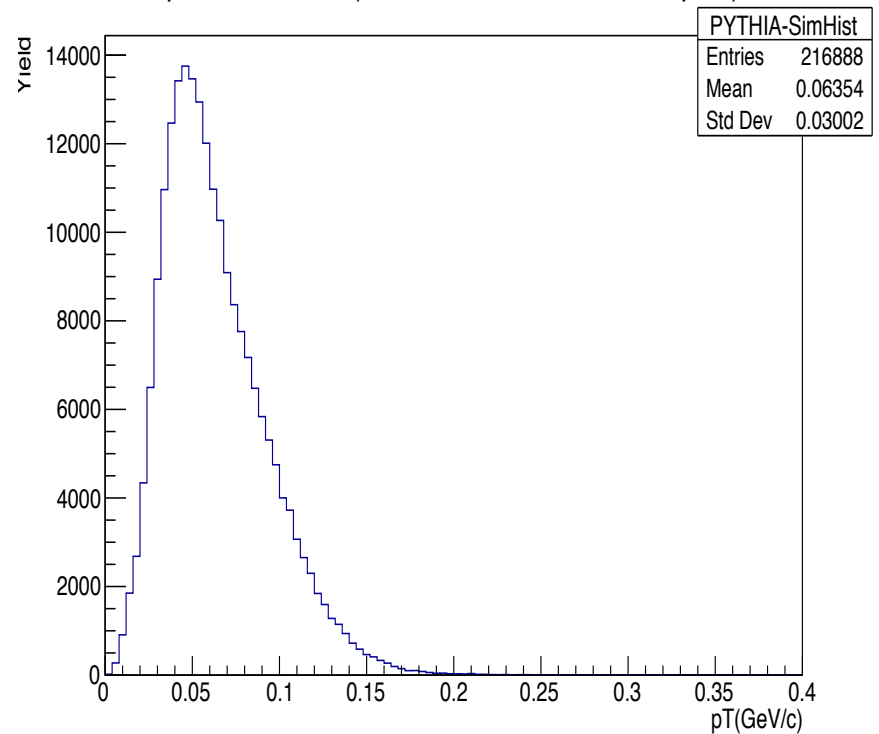
Single Sample

PYTHIA Monte Carlo Sample



Concatenated Samples (2000)

p_T Distribution (PYTHIA Monte Carlo Samples)



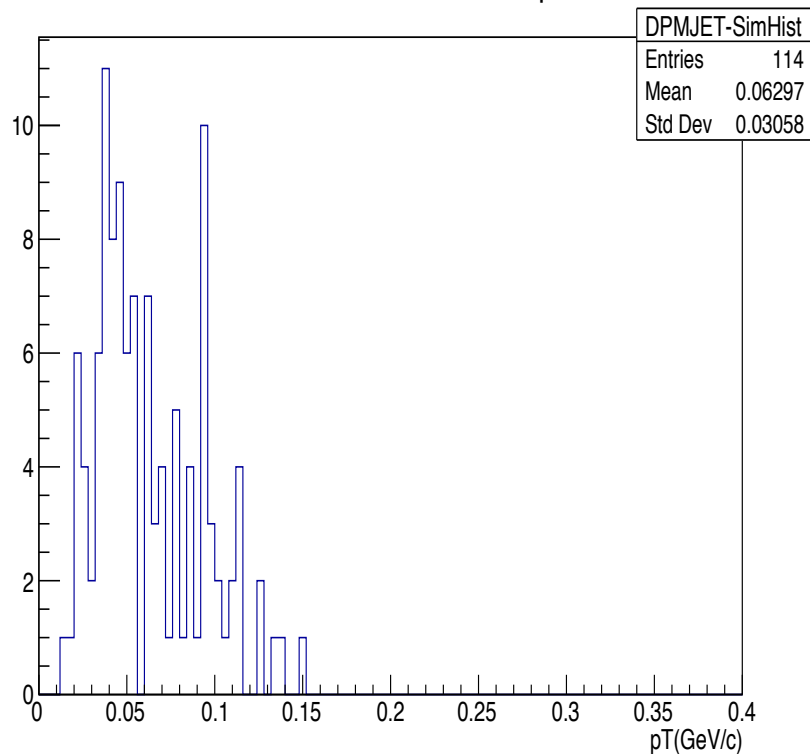
P_T Distribution (DPMJET MC Samples)

Slide 7

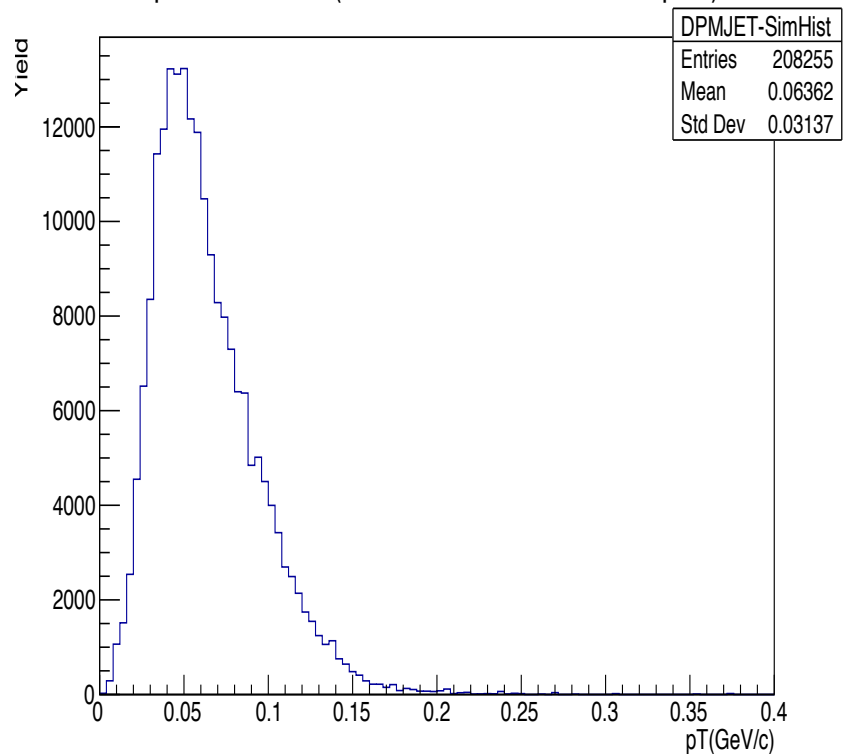
Single Sample

Concatenated Samples (1994)

DPMJET Monte Carlo Sample

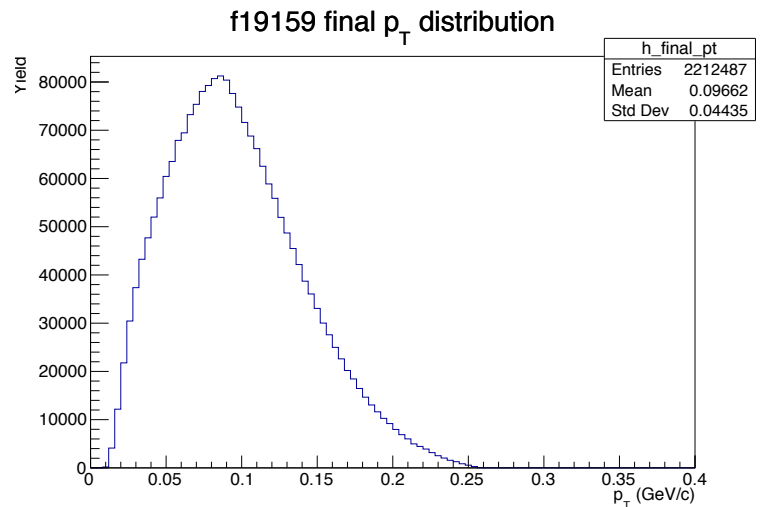
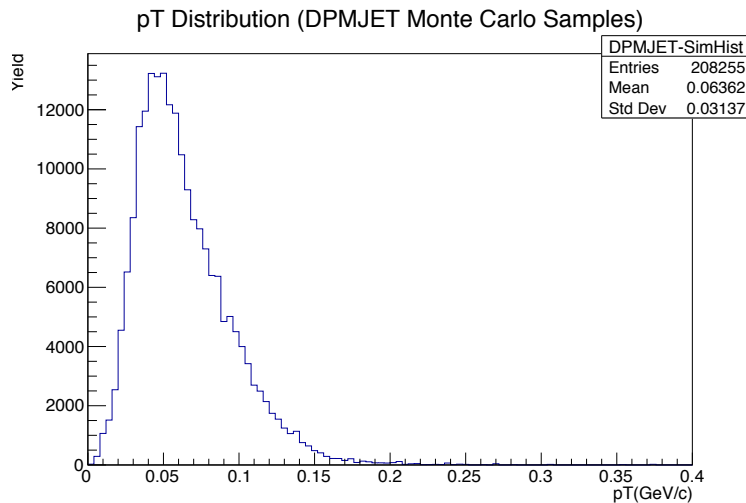
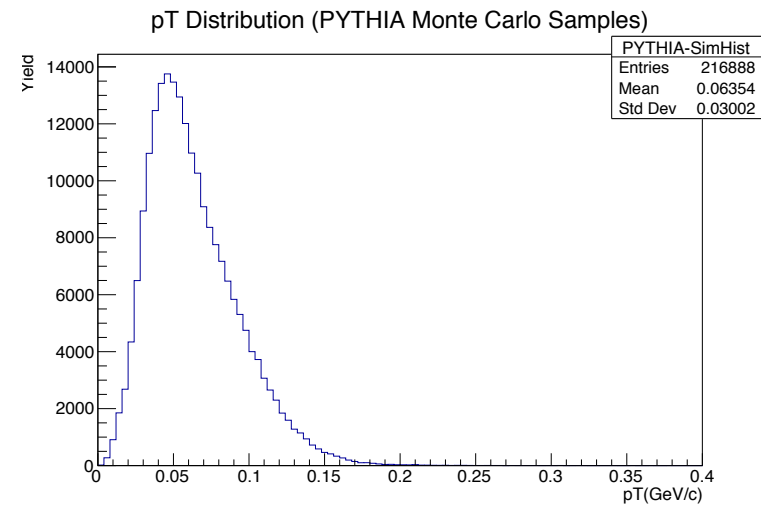
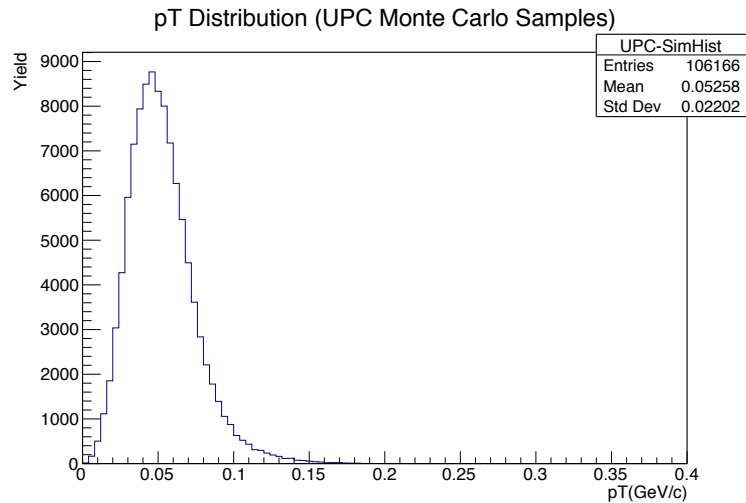


p_T Distribution (DPMJET Monte Carlo Samples)



P_T Distribution (UPC, PYTHIA, DPMJET, Data)

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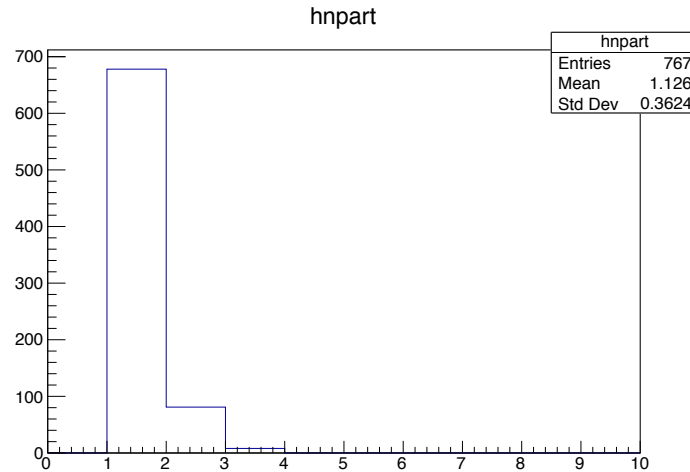


Next Task

Slide 9

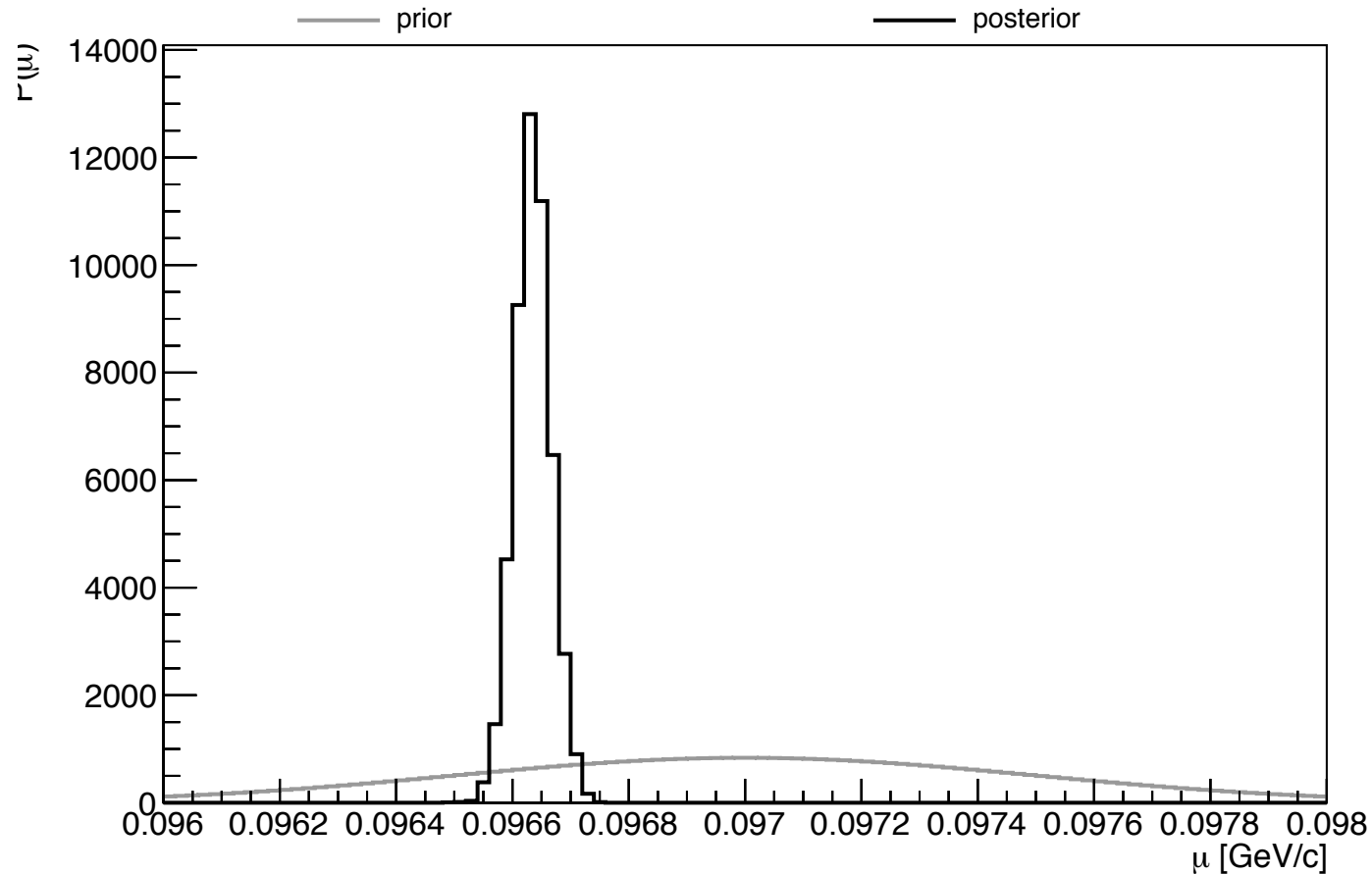
- © Make combinations of MC samples (UPC + PYTHIA) or (UPC + DPMJET) and produce a combined P_T distribution for unfolding.

BACKUP: UPC

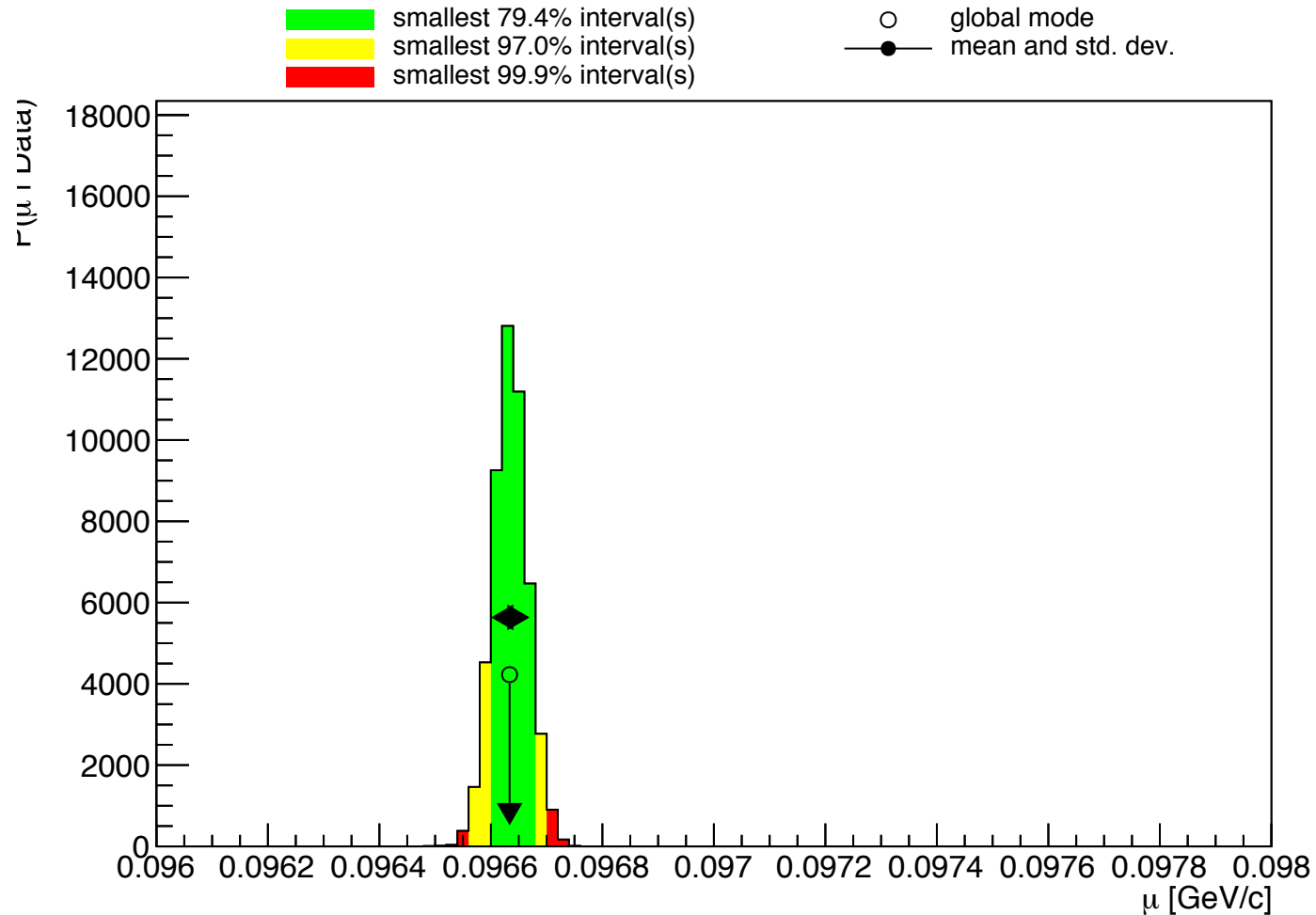


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*.....*
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*Baskets :            1 : Basket Size=         32000 bytes Compression=          1.43 *
*.....*
*Br    8 :pz          : pz[hnpart]/F          *
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*Baskets :            1 : Basket Size=         32000 bytes Compression=          1.48 *
*.....*
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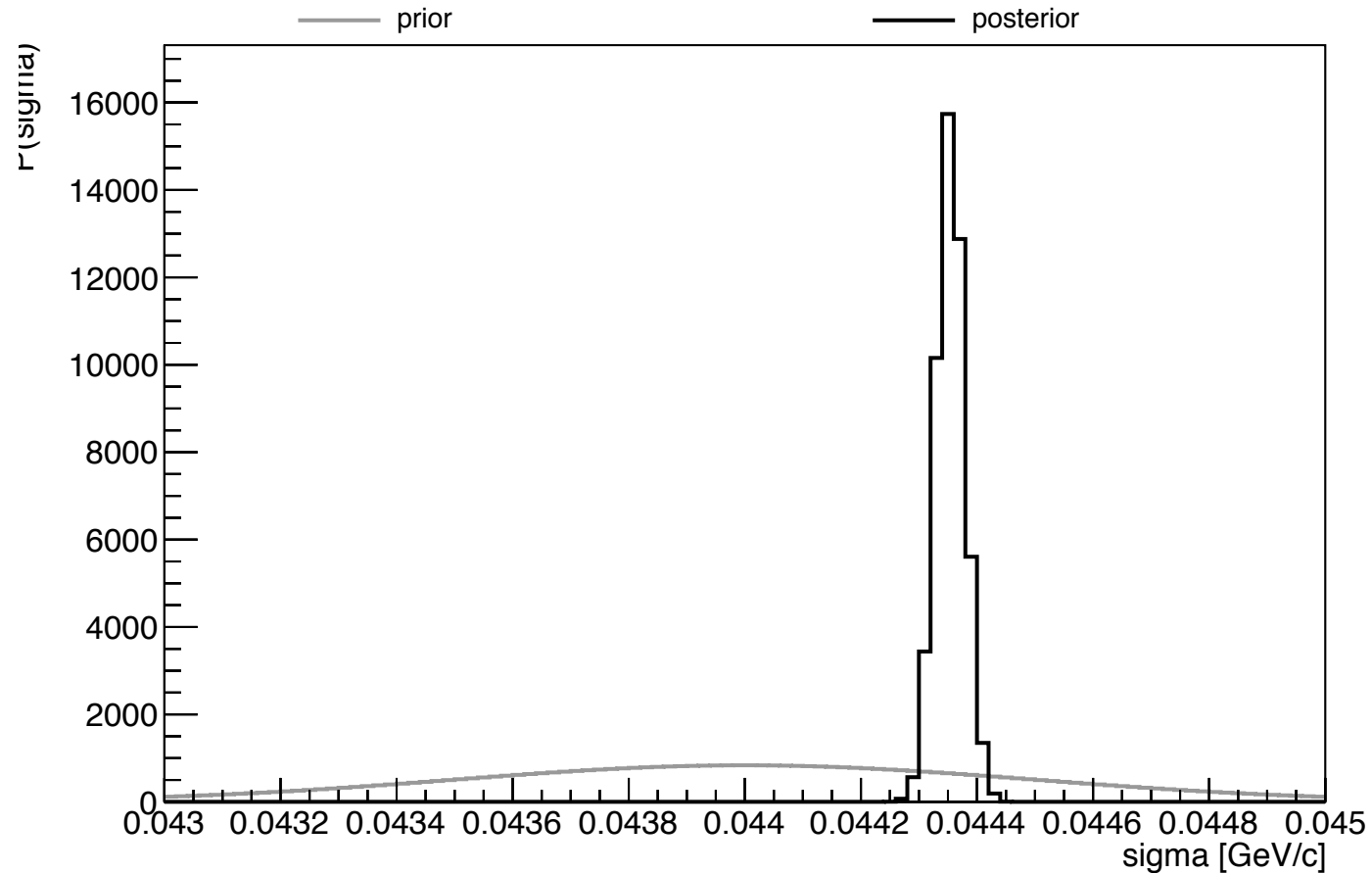
BACKUP – Knowledge Update 1D Plot for Sigma Parameter



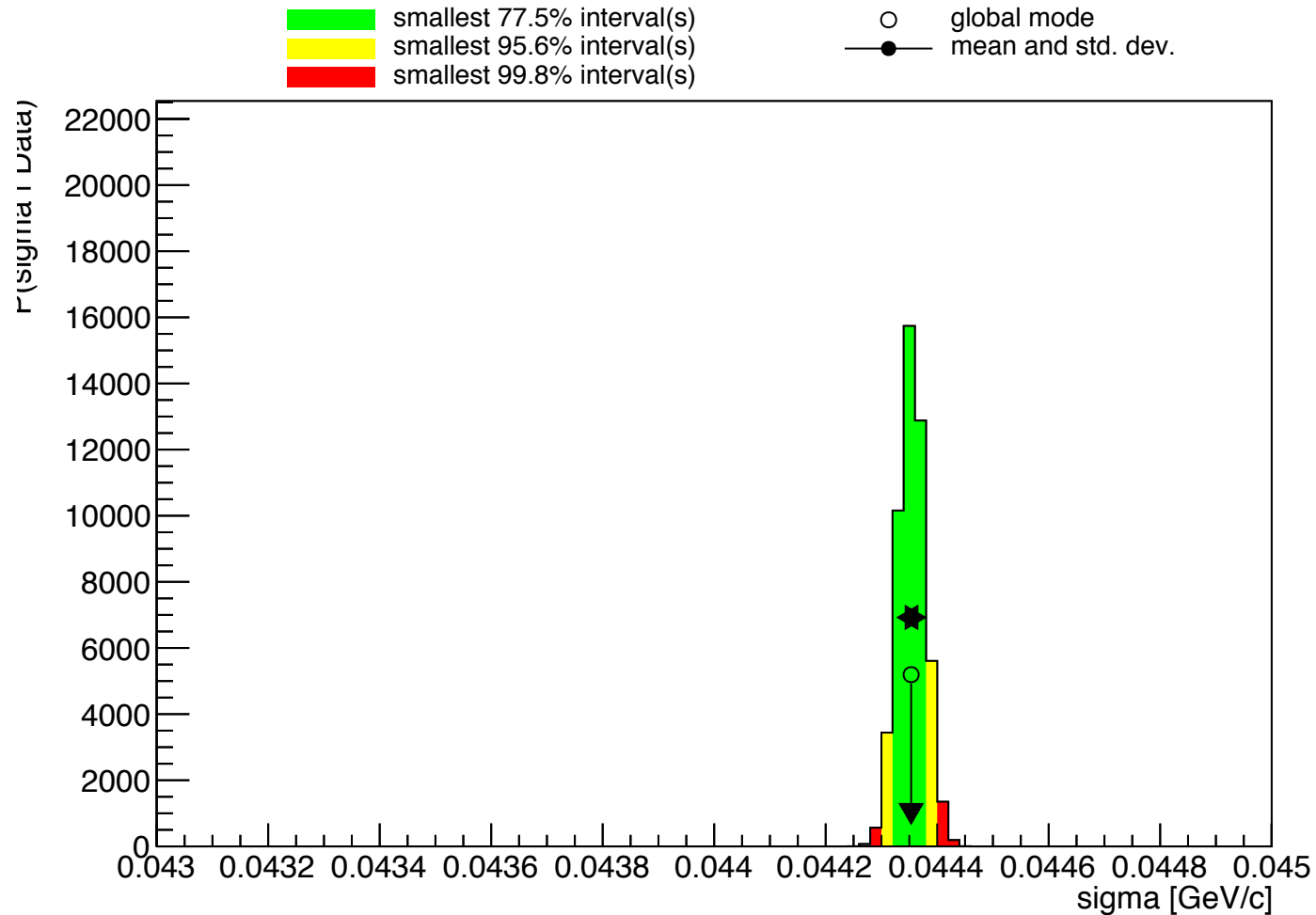
BACKUP – Marginalized 1D Plot for Mean Parameter



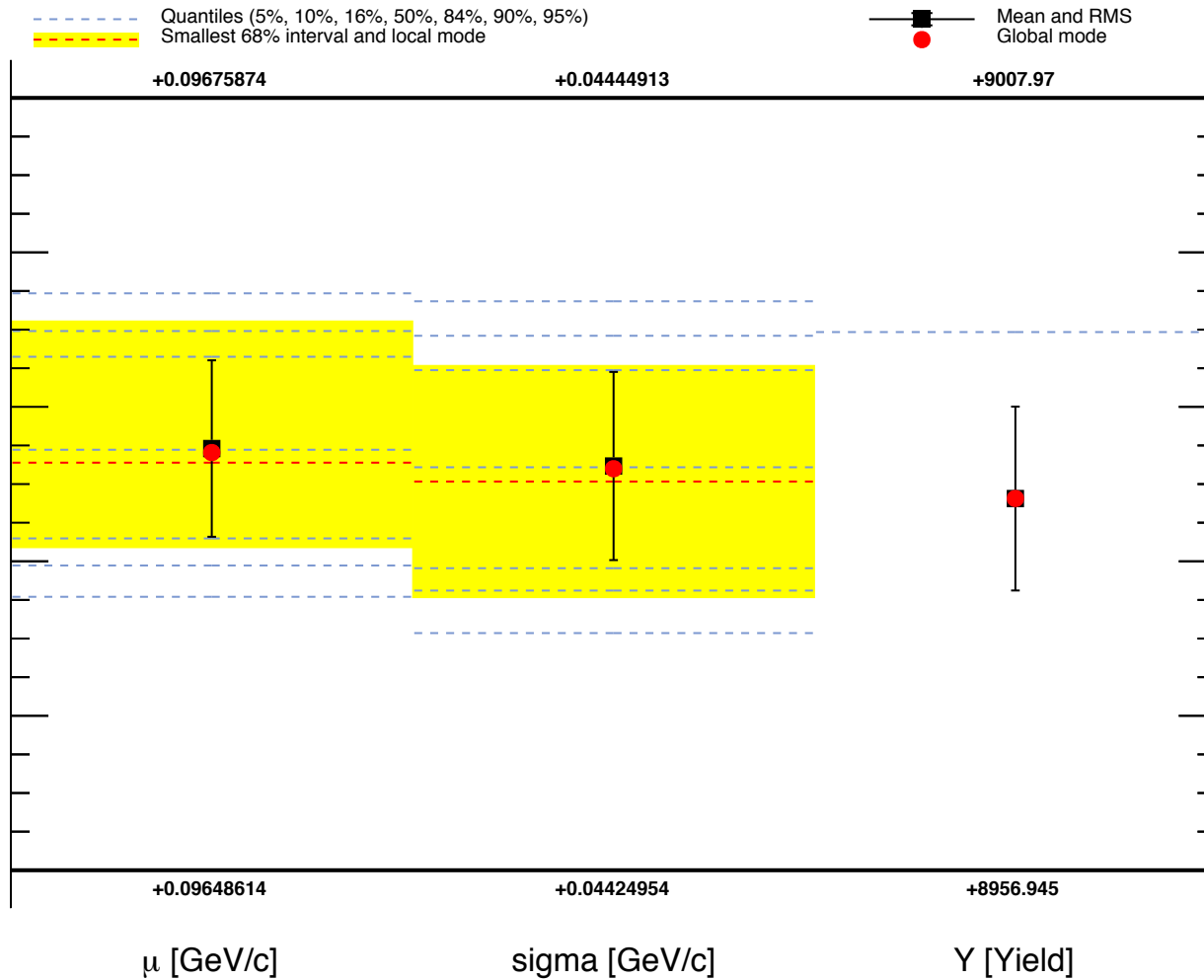
BACKUP – Knowledge Update 1D Plot for Sigma Parameter



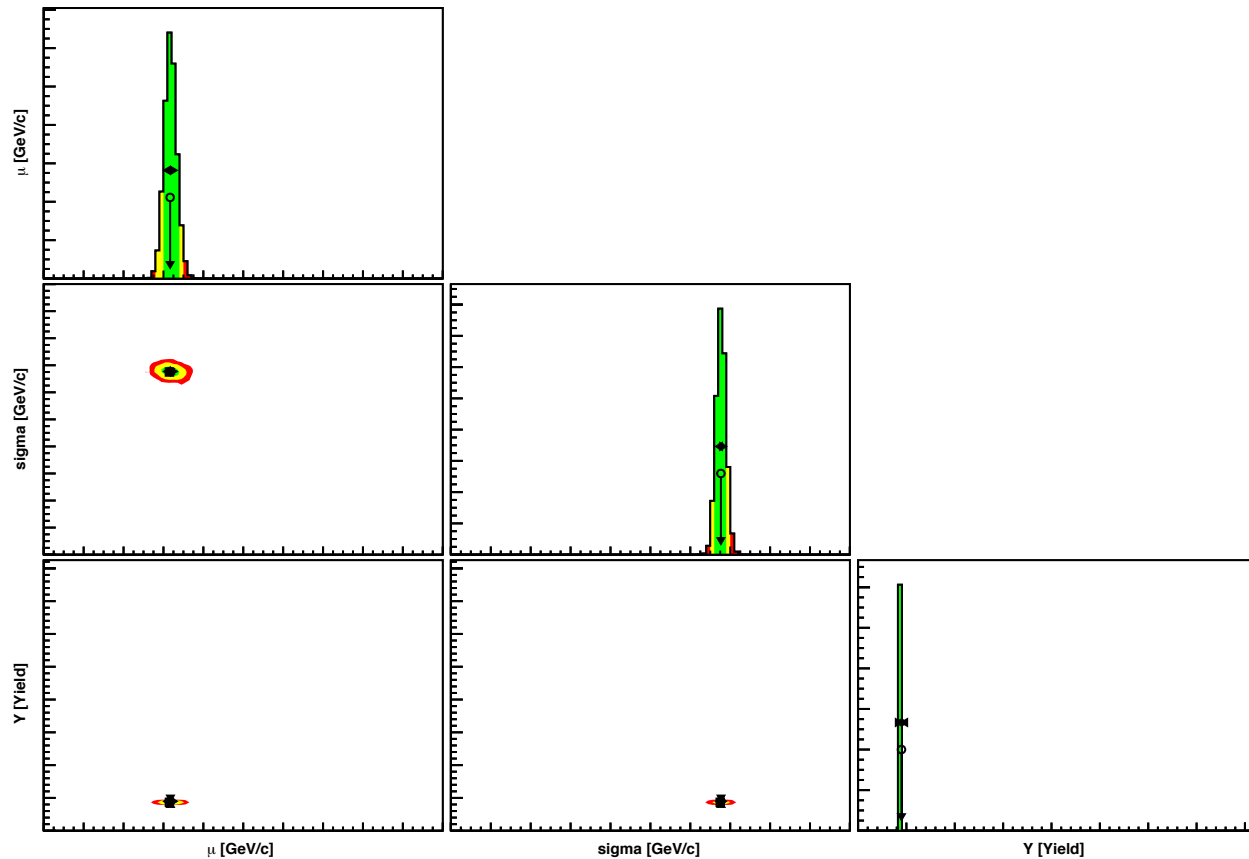
BACKUP – Marginalized 1D Plot for Sigma Parameter



BACKUP – Mean and Sigma Parameters In Same Plot



BACKUP – Parameter Correlation of 1D and 2D Plots



BACKUP – Correlation Matrix For All 3 Parameters

