

Analysis Progress on DVMP

BY

Olaiya Olokunboyo

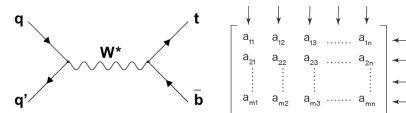
Supervisor: Prof. Nathaly

eA study group

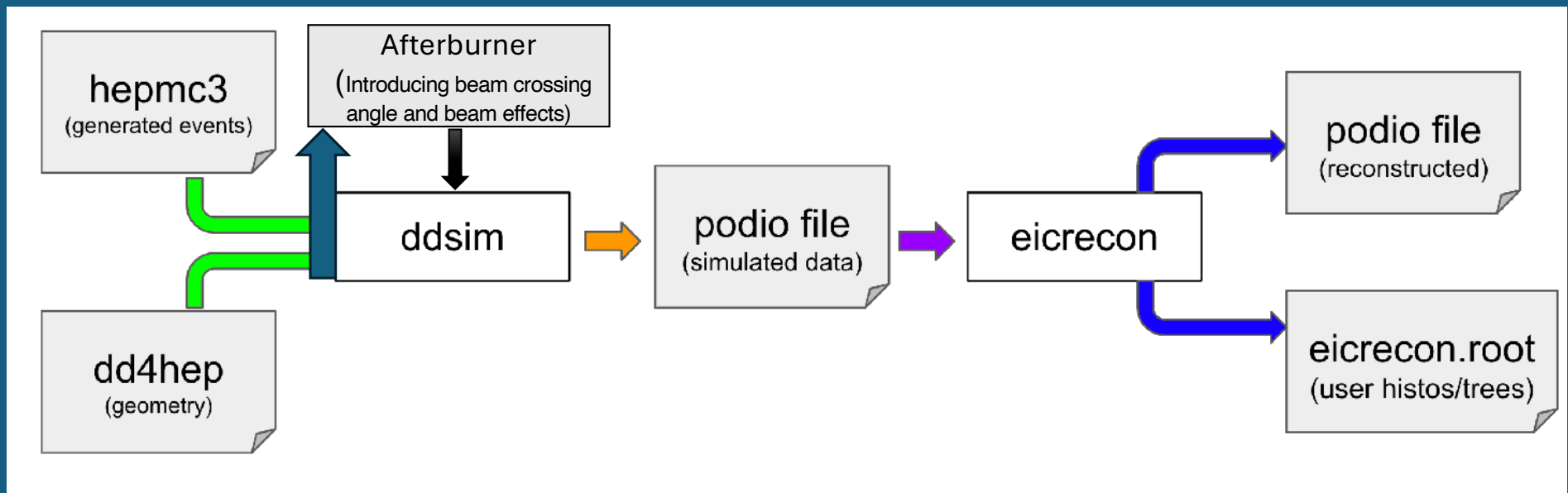
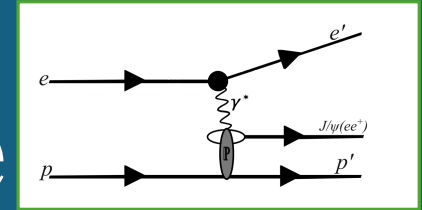
10/29/2024



University of
New Hampshire



Data Acquisition Procedure



New Data Set	$1 < Q^2 < 10$	Luminosity = 10 fb^{-1}	18x275 GeV
	$1 < Q^2 < 10$	Luminosity = 10 fb^{-1}	10x100 GeV

eA study group
10/29/2024

Events and Cuts for 18x275 Data

Total number of events

376512

Total number of events
with 3 Tracks

308625

Total number of events
in other Tracks

67887

Total number of events in 3
Tracks

308625

Total number of events
with eee^+

106799

Total number of events
with ee^+e

91915

Total number of events
with e^+ee

109520

Total number of events
not having any of the
above combinations

391

Applying the cuts from E_P_Eta Cdsn

```
ea.E() > eb.E() && (abs(ea.Pz()) > abs(eb.Pz())) &&
Eta_ea < Eta_eb;
```

```
save e' = ea and J/Psi_e = eb;
```

```
eb.E() > ea.E() && (abs(eb.Pz()) > abs(ea.Pz())) &&
Eta_ea > Eta_eb;
```

```
save e' = eb and J/Psi_e = ea;
```

else how many events out of 308234 do not satisfy
these conditions?

22147

Summary

Placing P_T cut of 200 MeV on RP events
gives 279826 reconstructed protons

Total reconstructed scattered electrons
gives 286087

Using the charge for selection reco_track_c[0] == -1 && reco_track_c[1] == -1 && reco_track_c[2] == 1

Events and Cuts for 10x100 Data

Total number of events

173500

Total number of events
with 3 Tracks

146164

Total number of events
in other Tracks

27336

Total number of events
in 3 Tracks

146164

Total number of events
with eee^+

47033

Total number of events
with ee^+e

44238

Total number of events
with e^+ee

54773

Total number of events
not having any of the
above combinations

120

Applying the cuts from E_P_Eta Cdtm

```
ea.E() > eb.E() && (abs(ea.Pz()) > abs(eb.Pz())) &&
Eta_ea < Eta_eb;
```

```
save e' = ea and J/Psi_e = eb;
```

```
eb.E() > ea.E() && (abs(eb.Pz()) > abs(ea.Pz())) &&
Eta_ea > Eta_eb;
```

```
save e' = eb and J/Psi_e = ea;
```

else how many events out of 308234 do not satisfy
these conditions?

14595

Summary

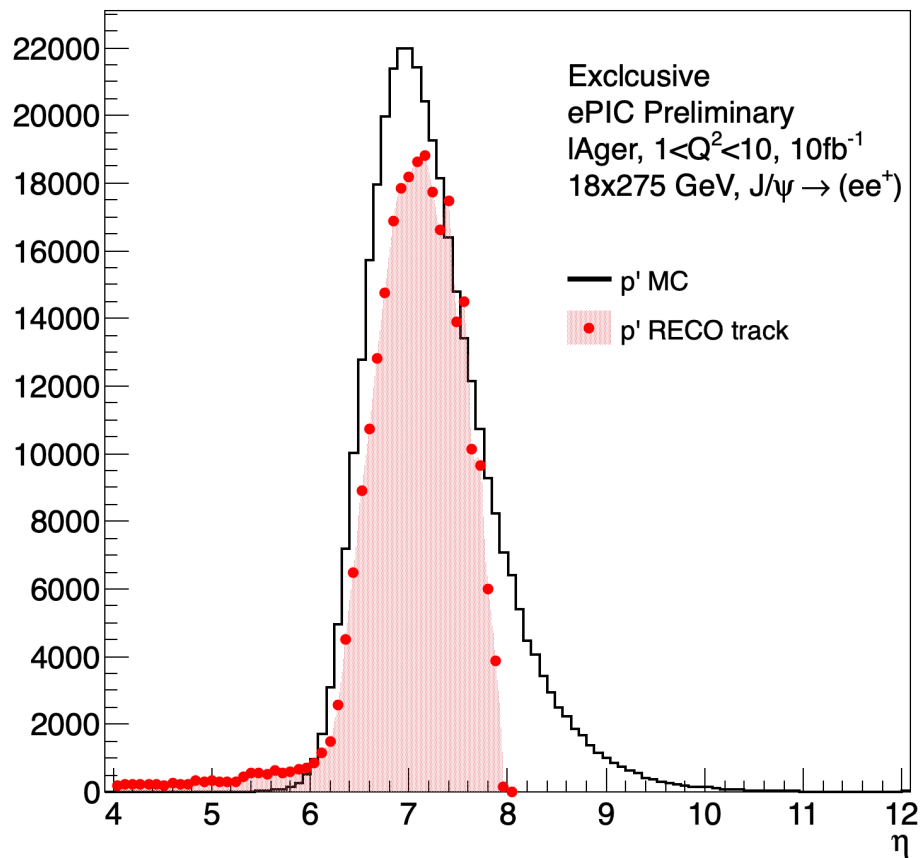
Placing P_T cut of 200 MeV on RP events
and $PD\bar{G} = 0$ && $\text{Eta} > 4$ gives 49093
reconstructed protons

Total reconstructed scattered electrons
gives 131449

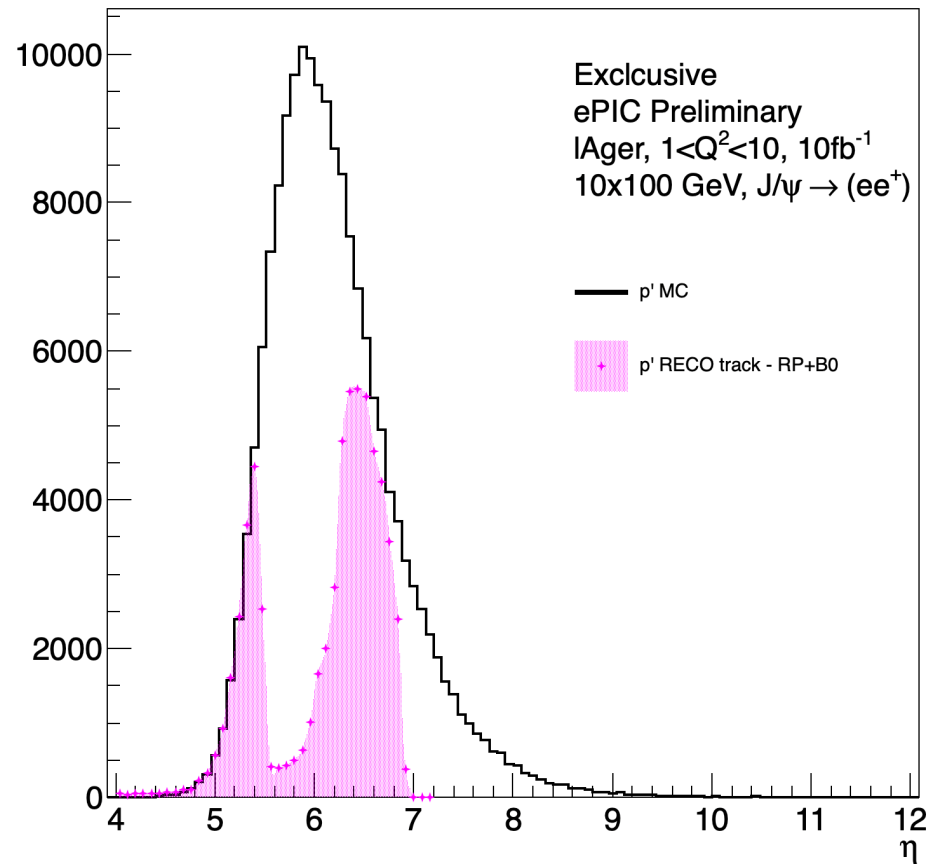
Using the charge for selection `reco_track_c[0] == -1 && reco_track_c[1] == -1 && reco_track_c[2] == 1`

Kinematic Variables

18x275

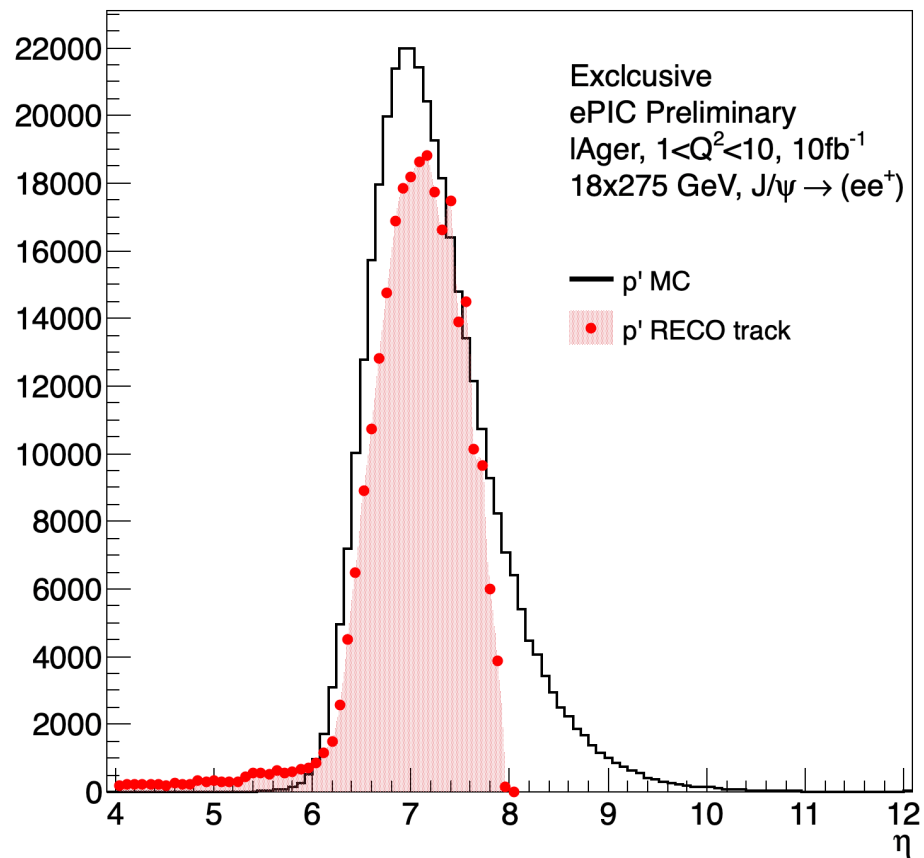


10x100

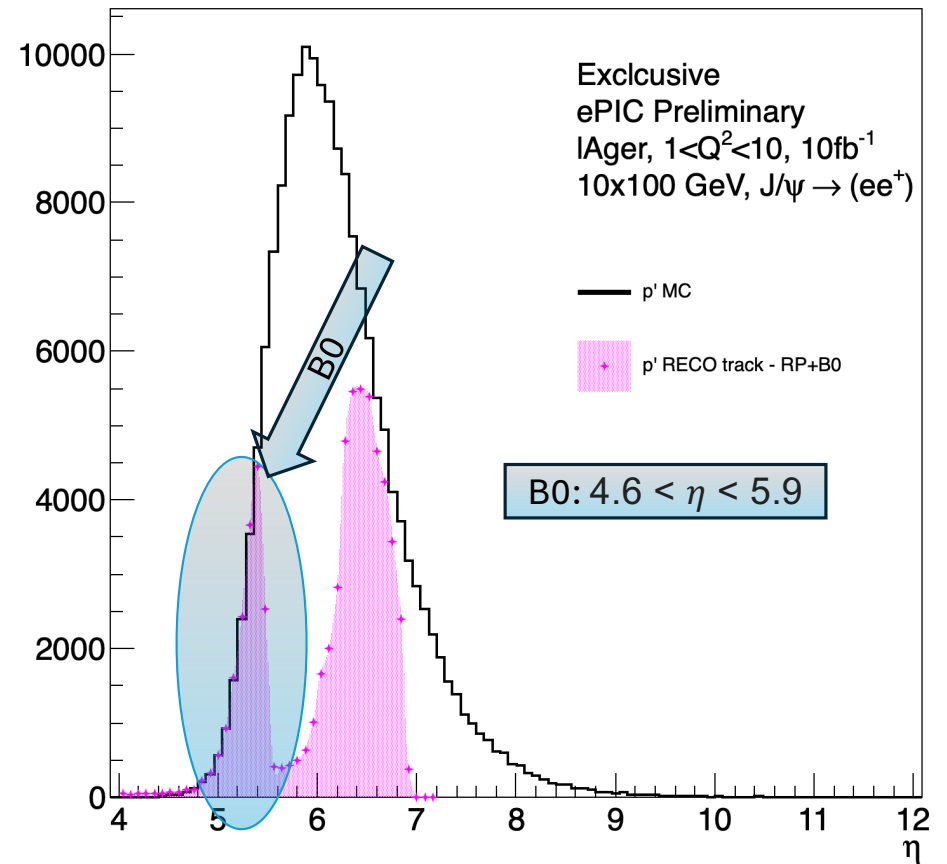


Kinematic Variables

18x275

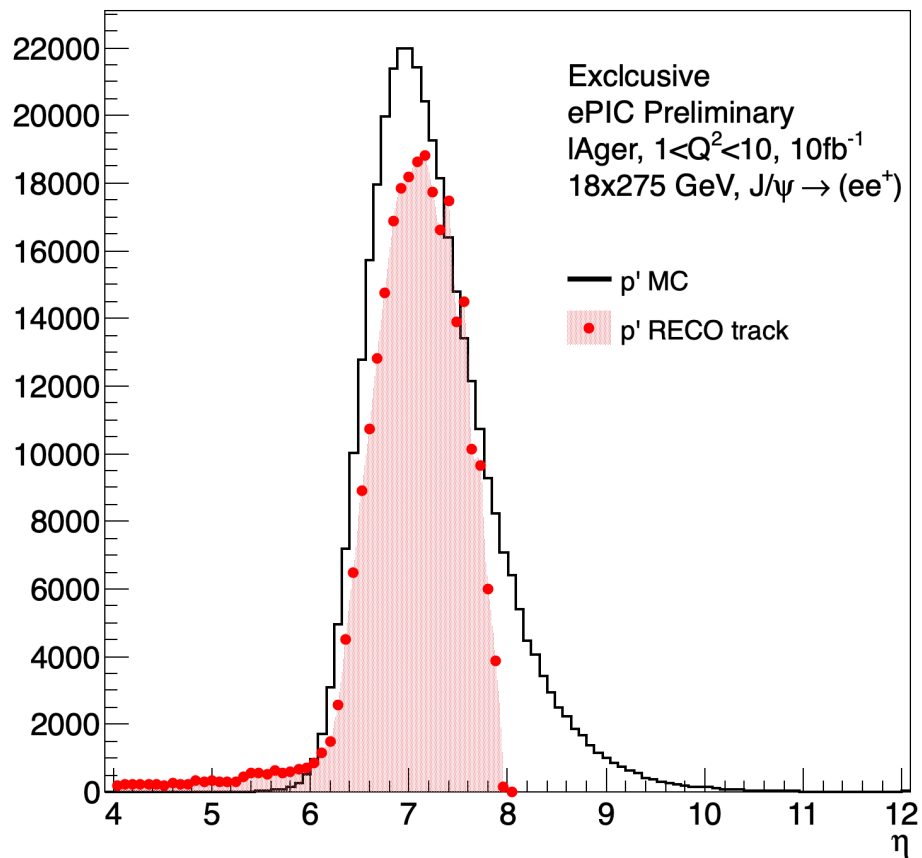


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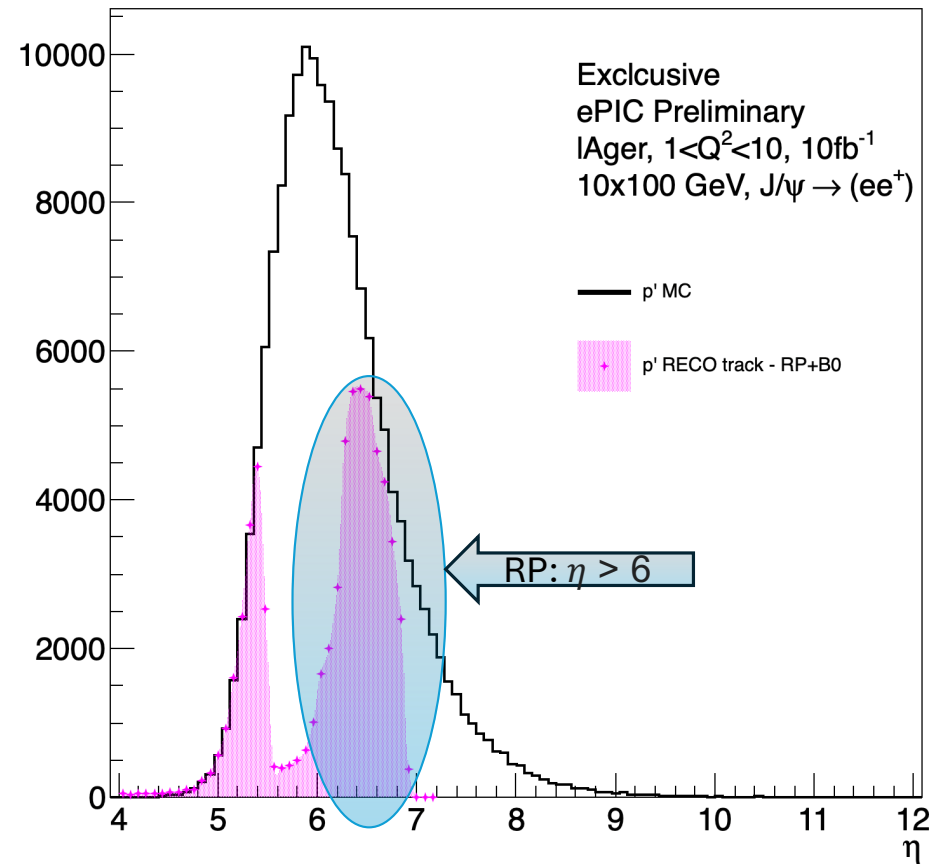


Kinematic Variables

18x275

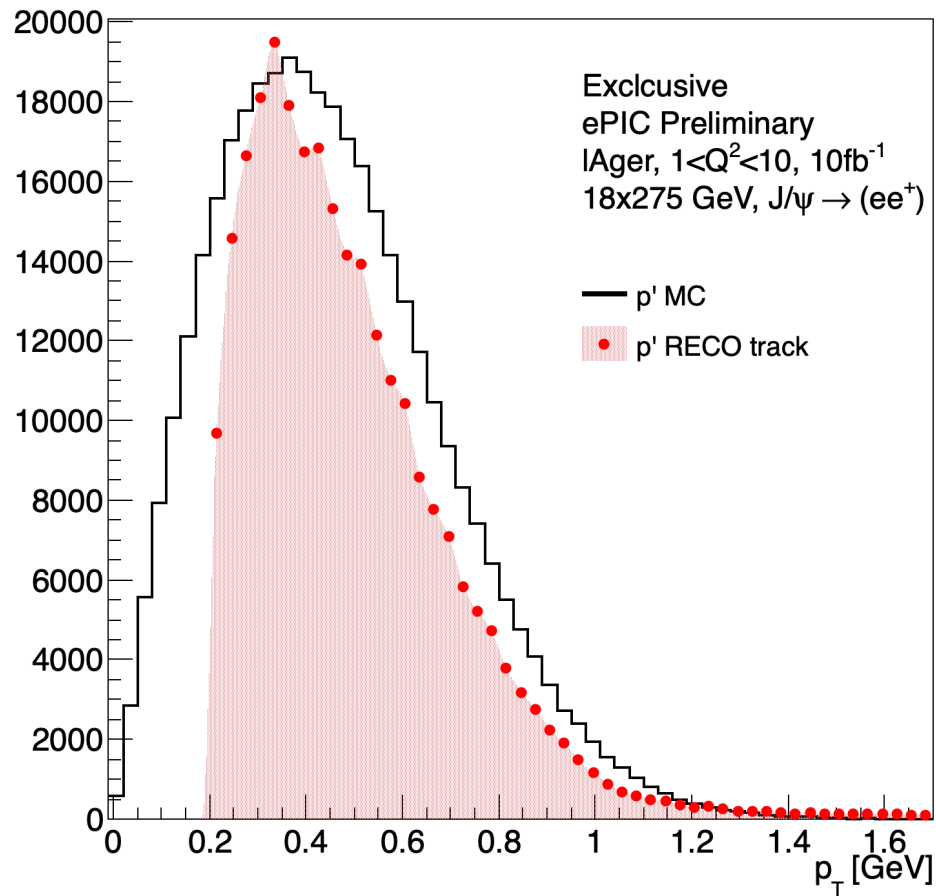


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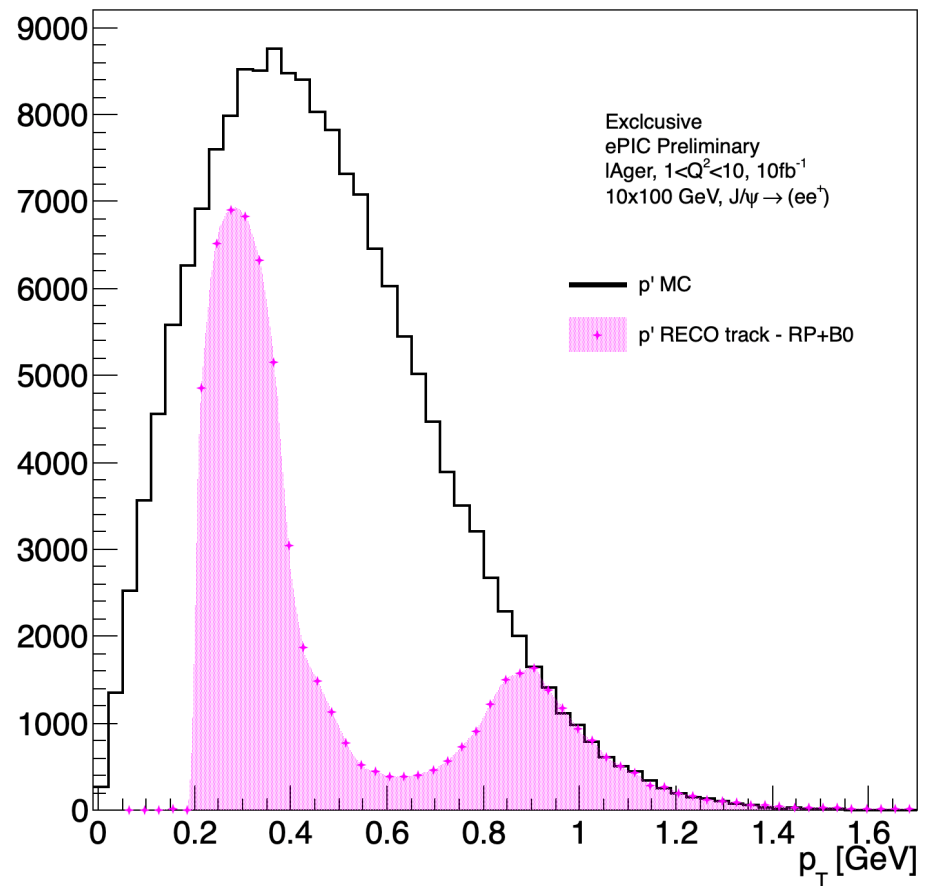


Kinematic Variables

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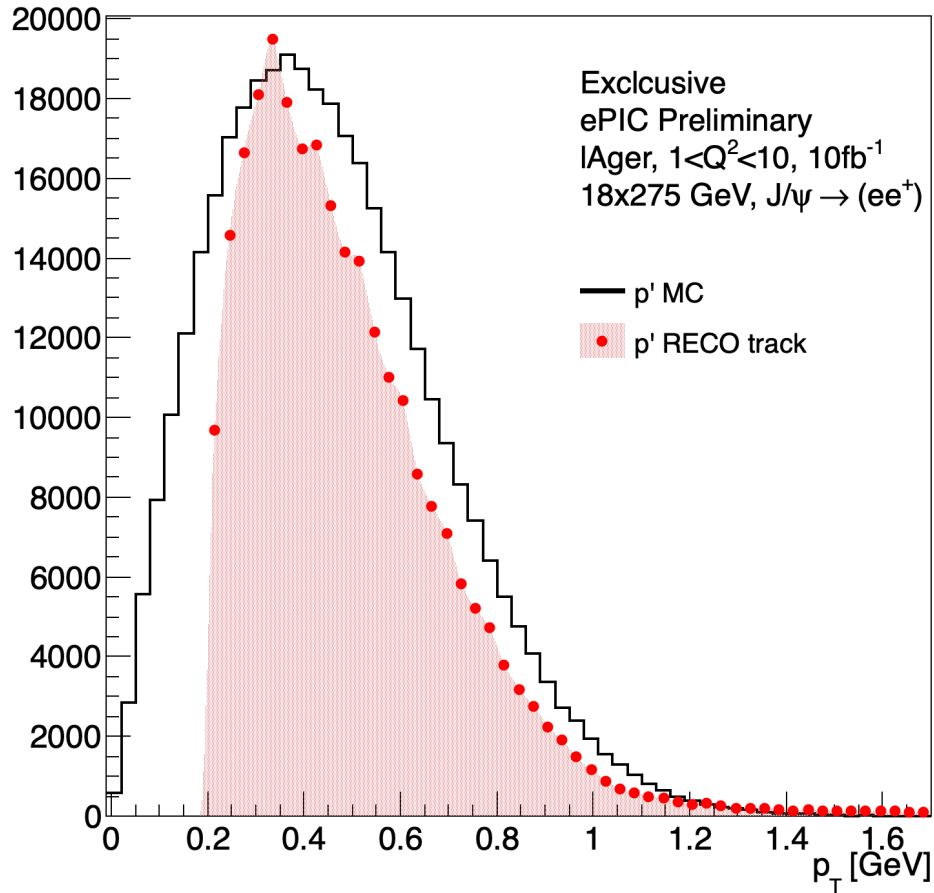


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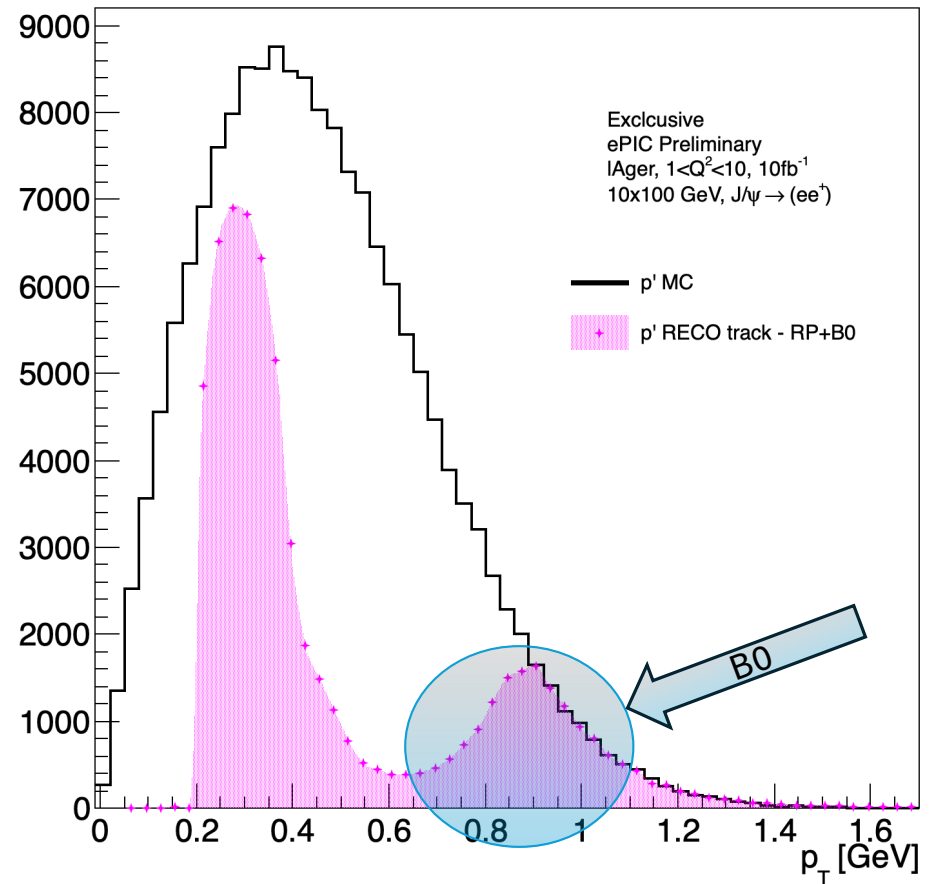


Kinematic Variables

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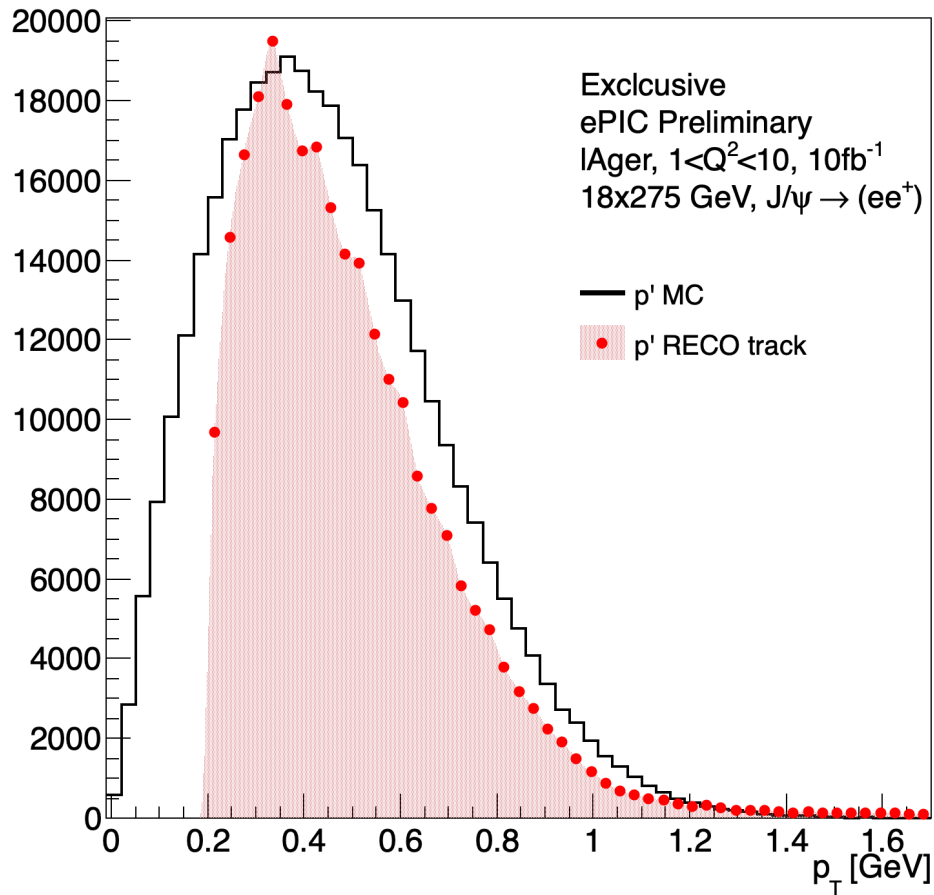


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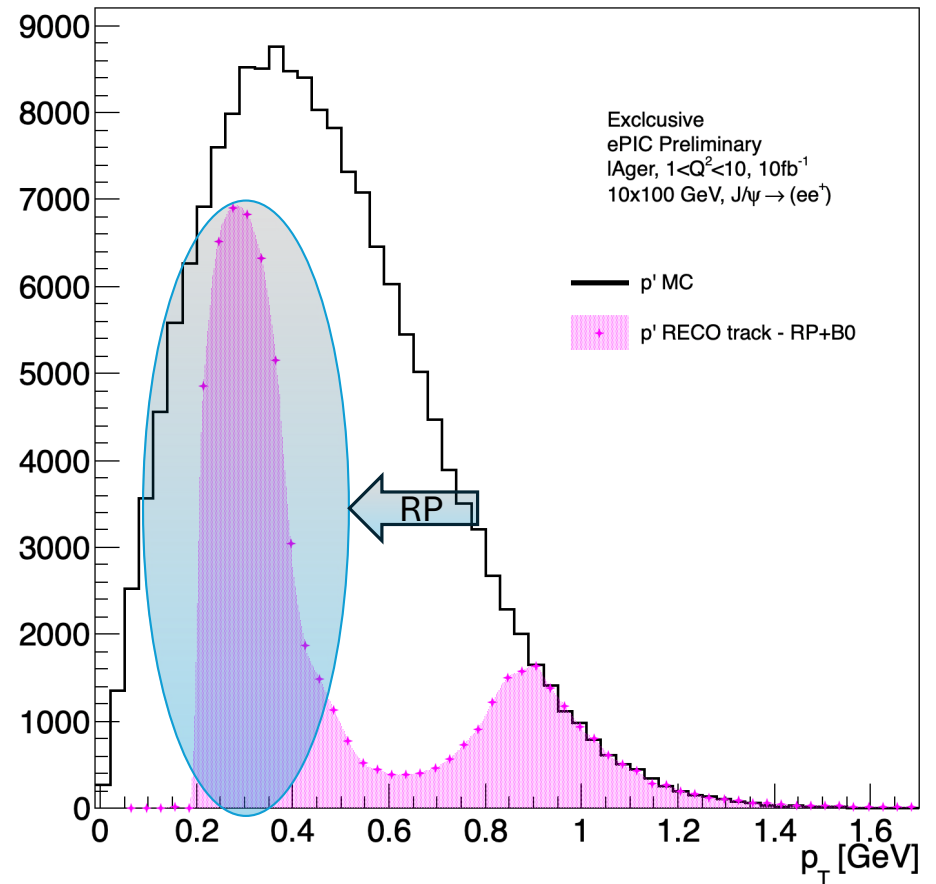


Kinematic Variables

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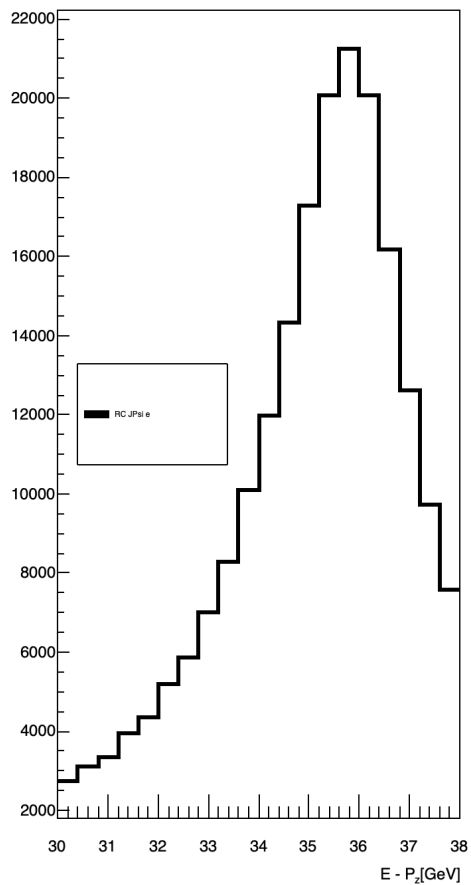
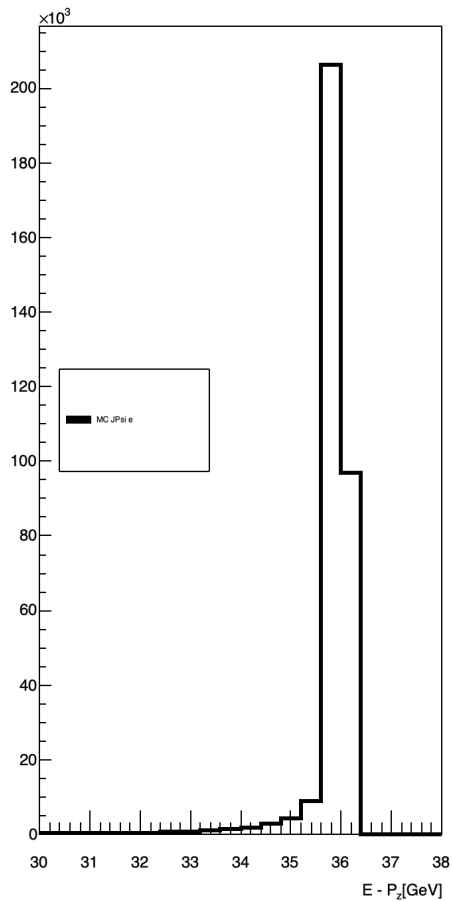


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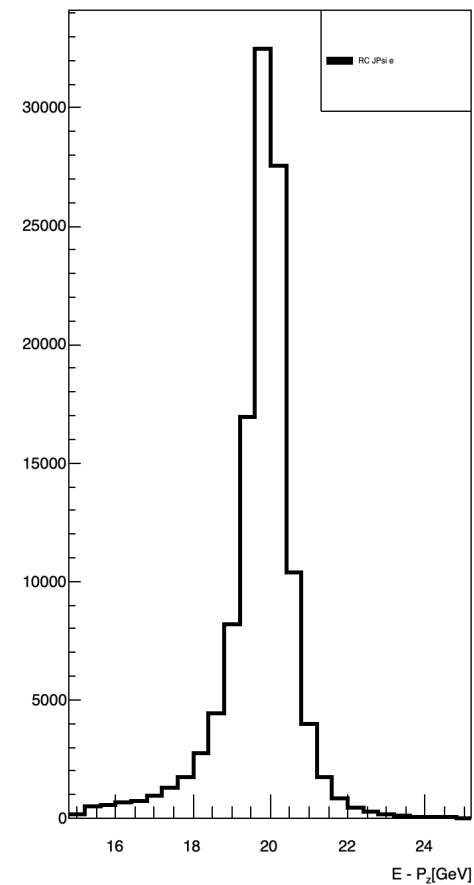
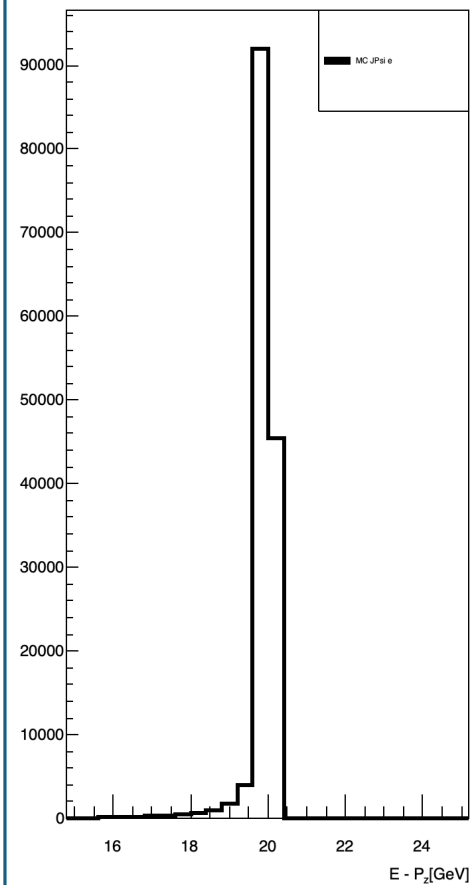


Kinematic Variables

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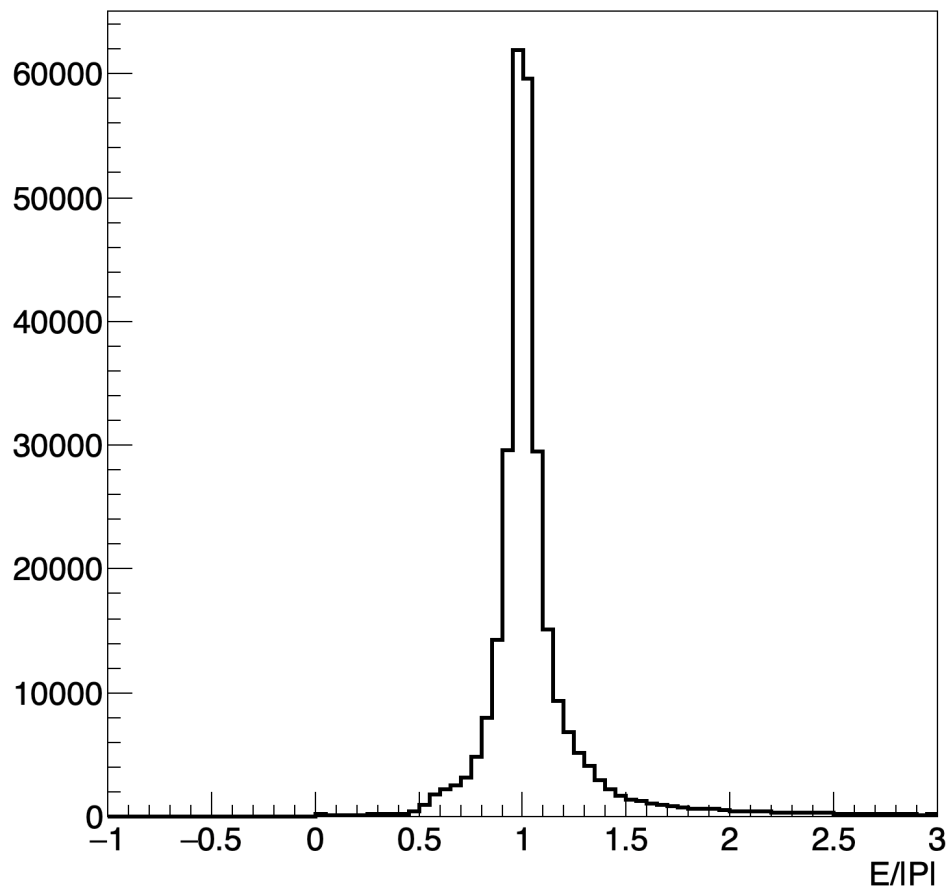


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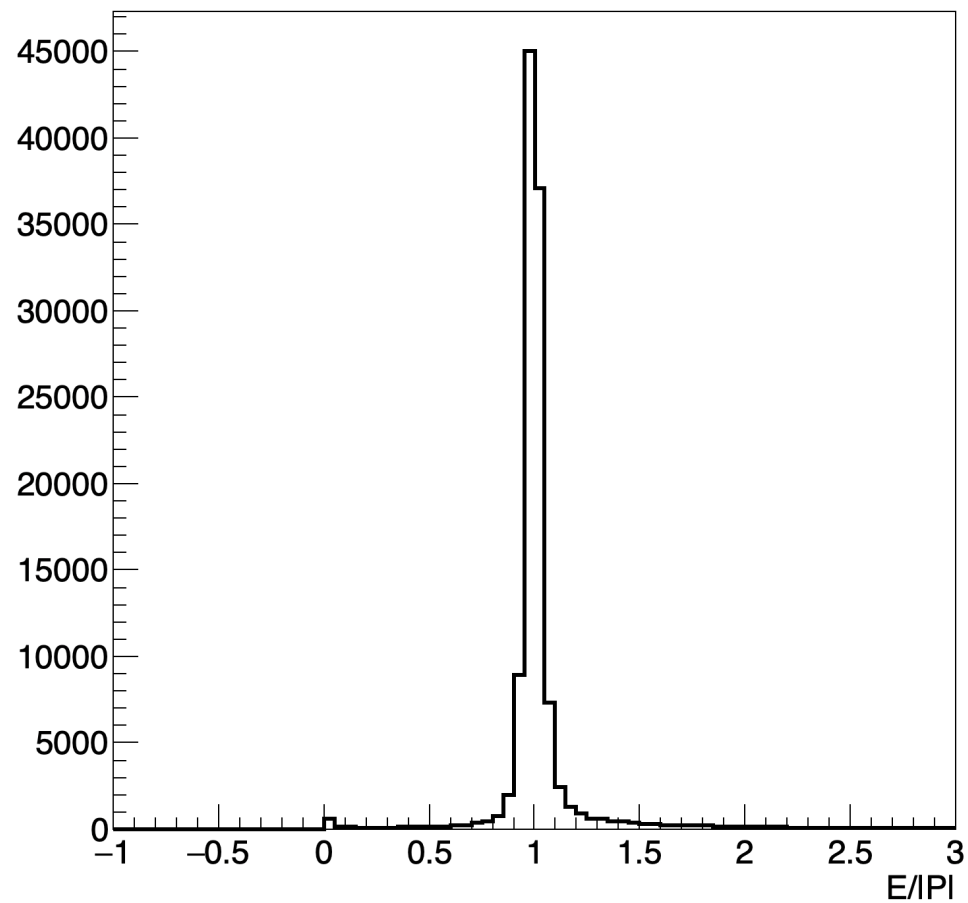


Kinematic Variables

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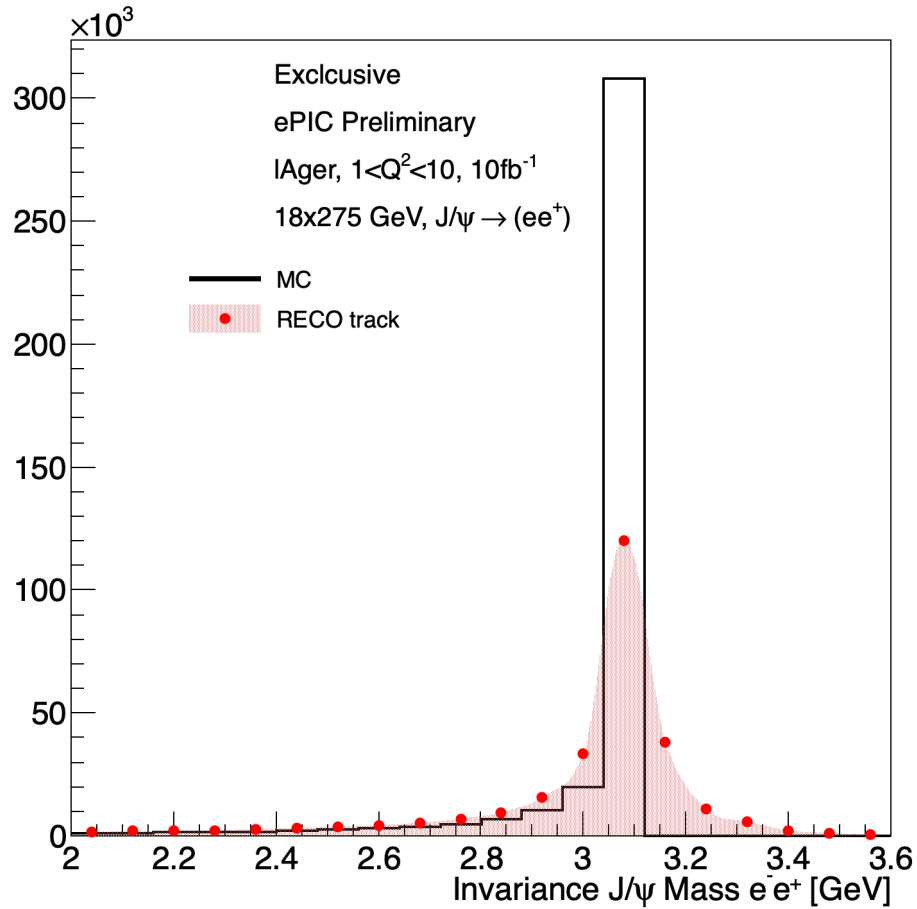


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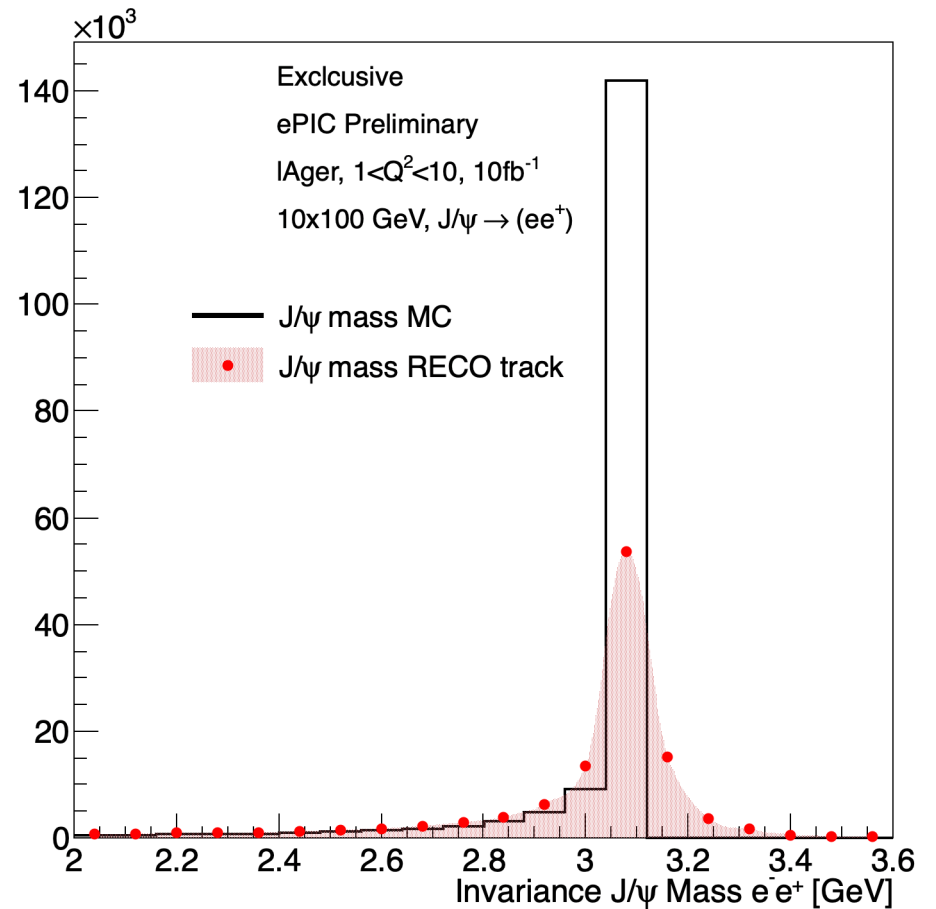


Kinematic Variables

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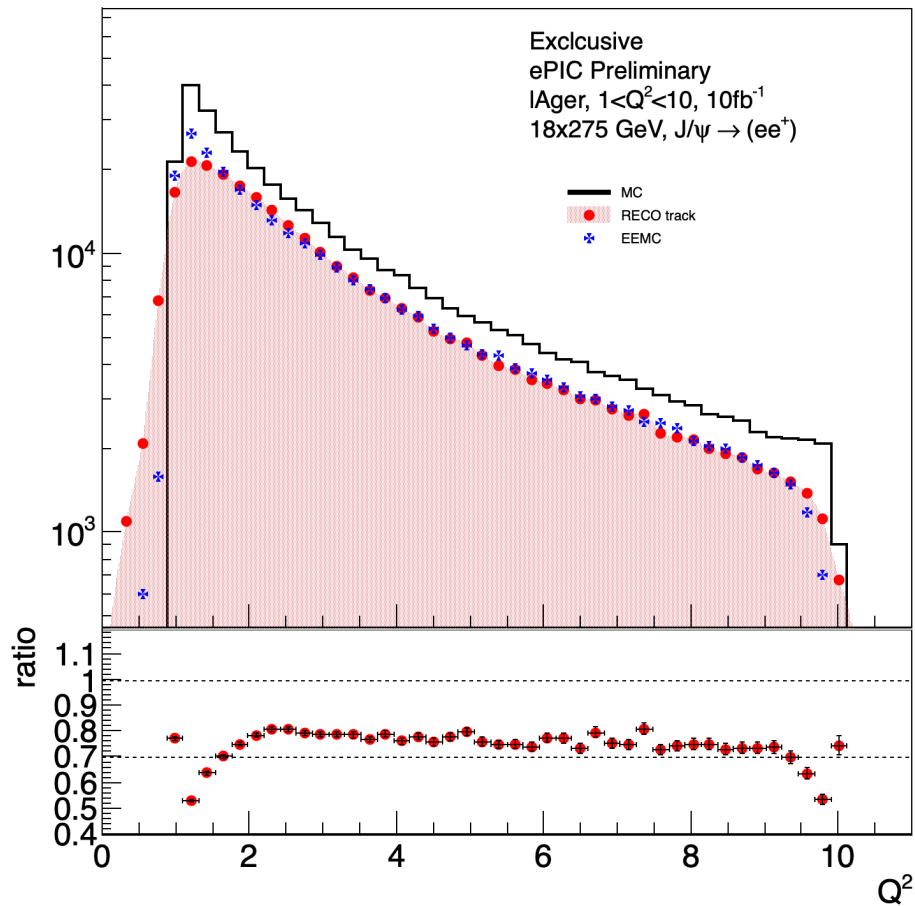


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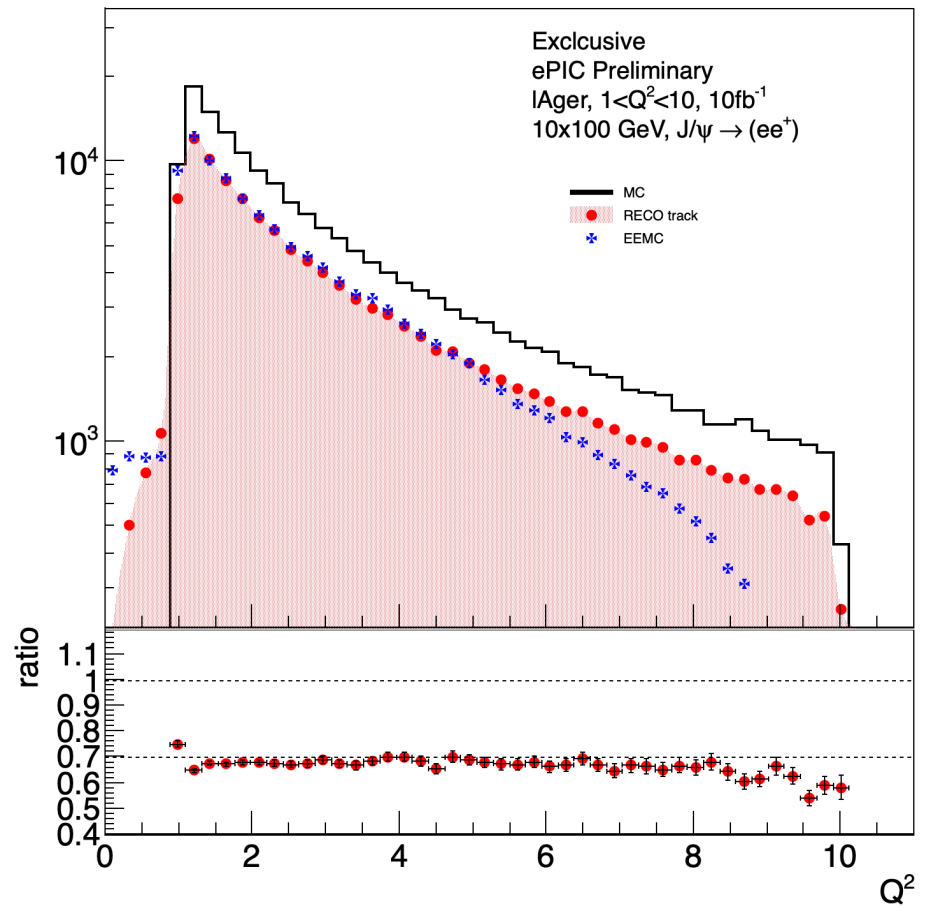


Kinematic Variables

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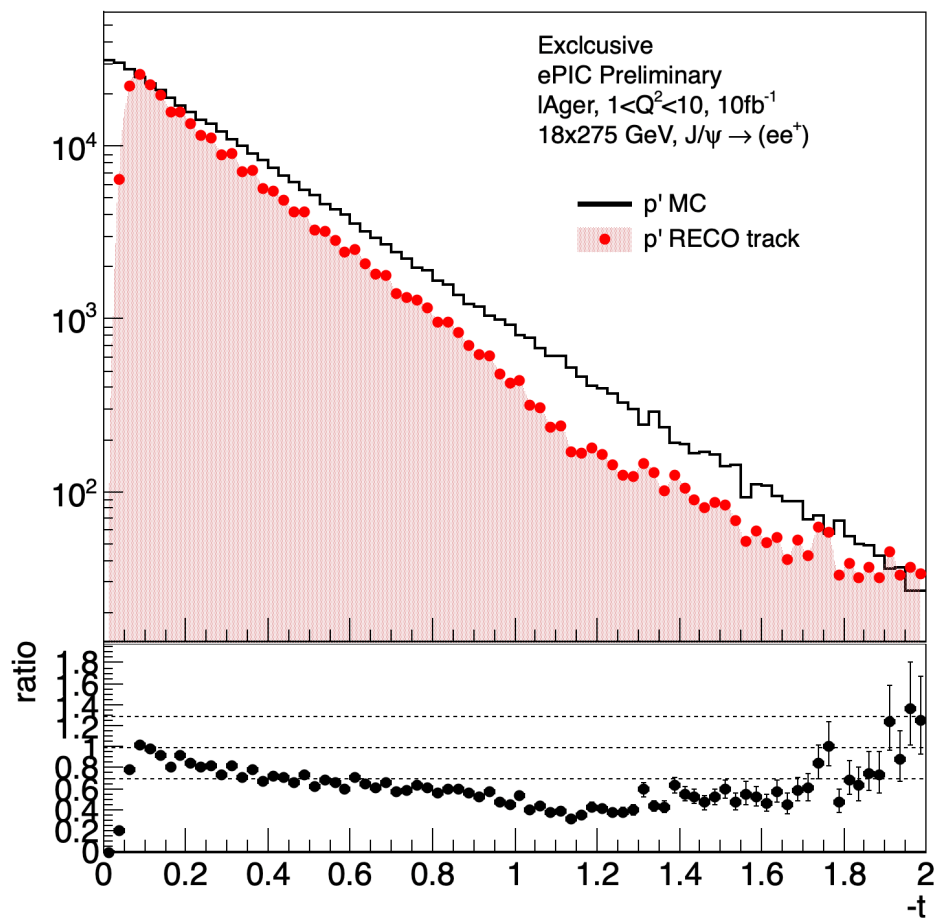


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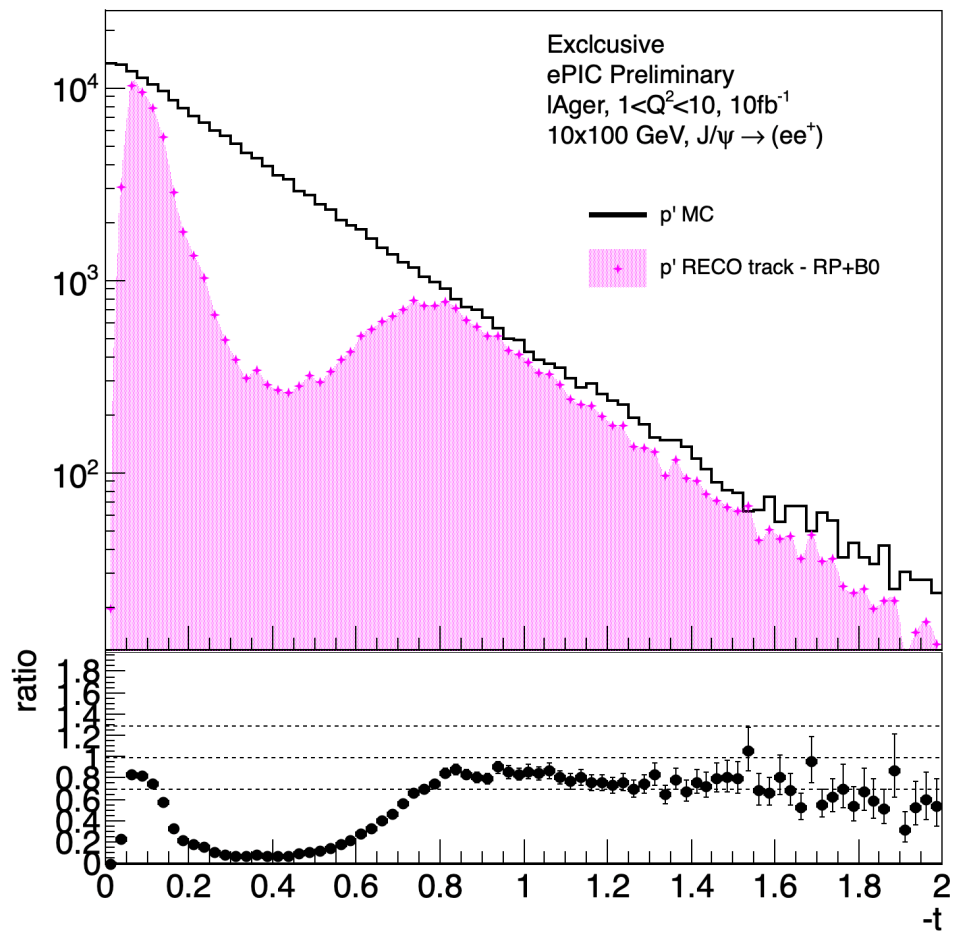


Kinematic Variables

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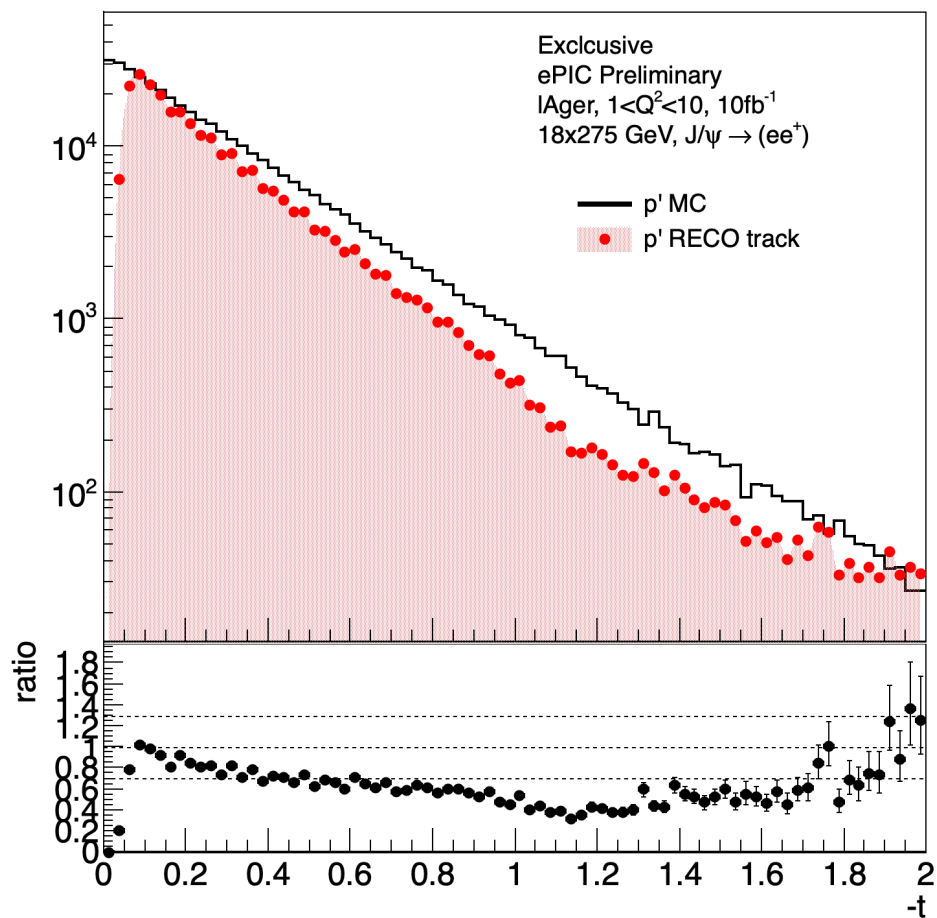


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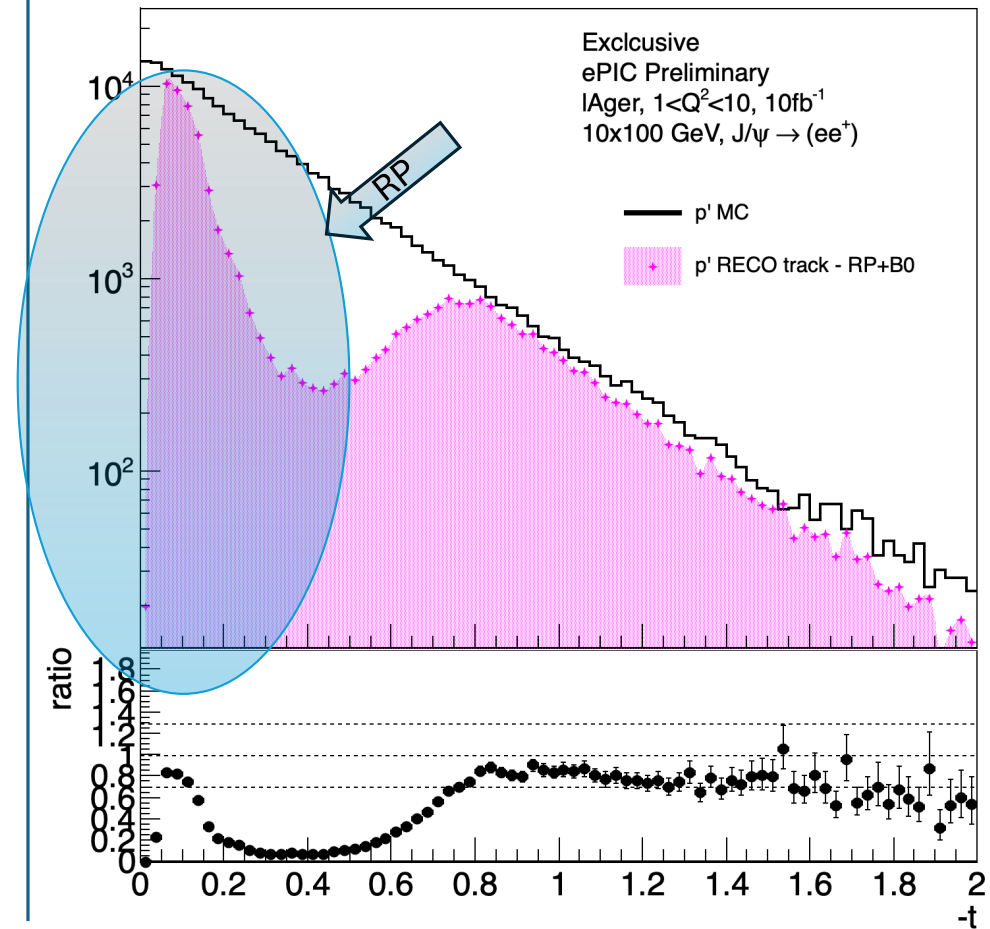


Kinematic Variables

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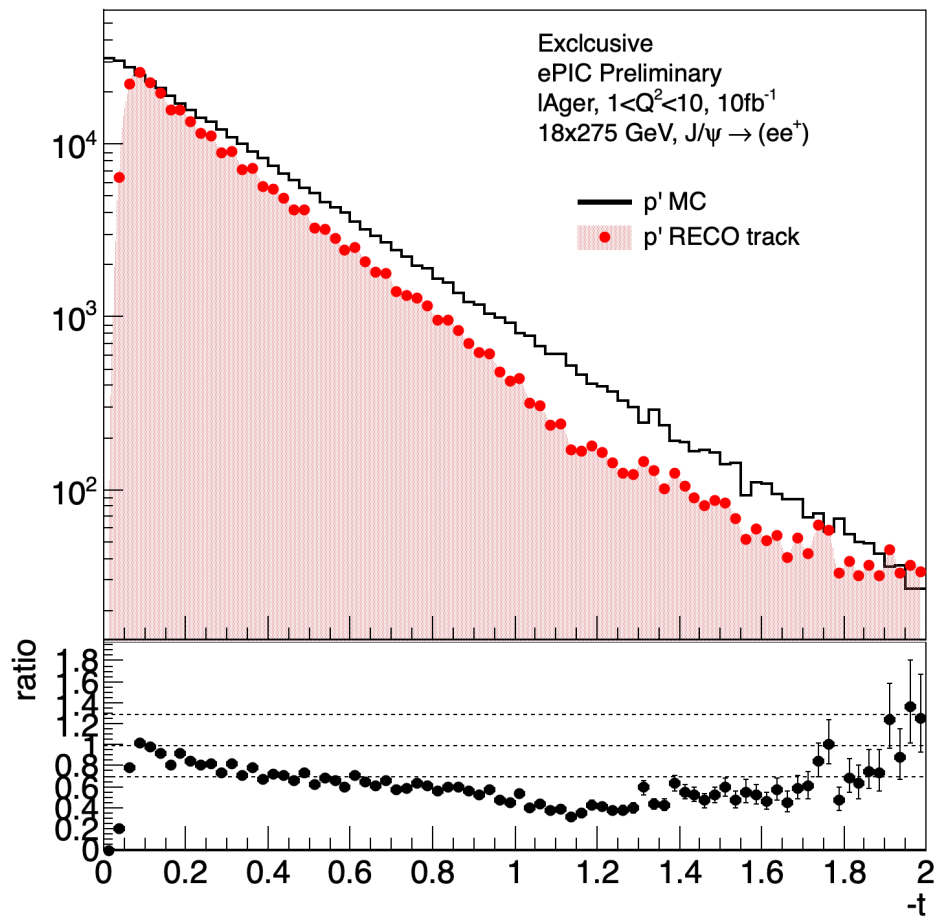


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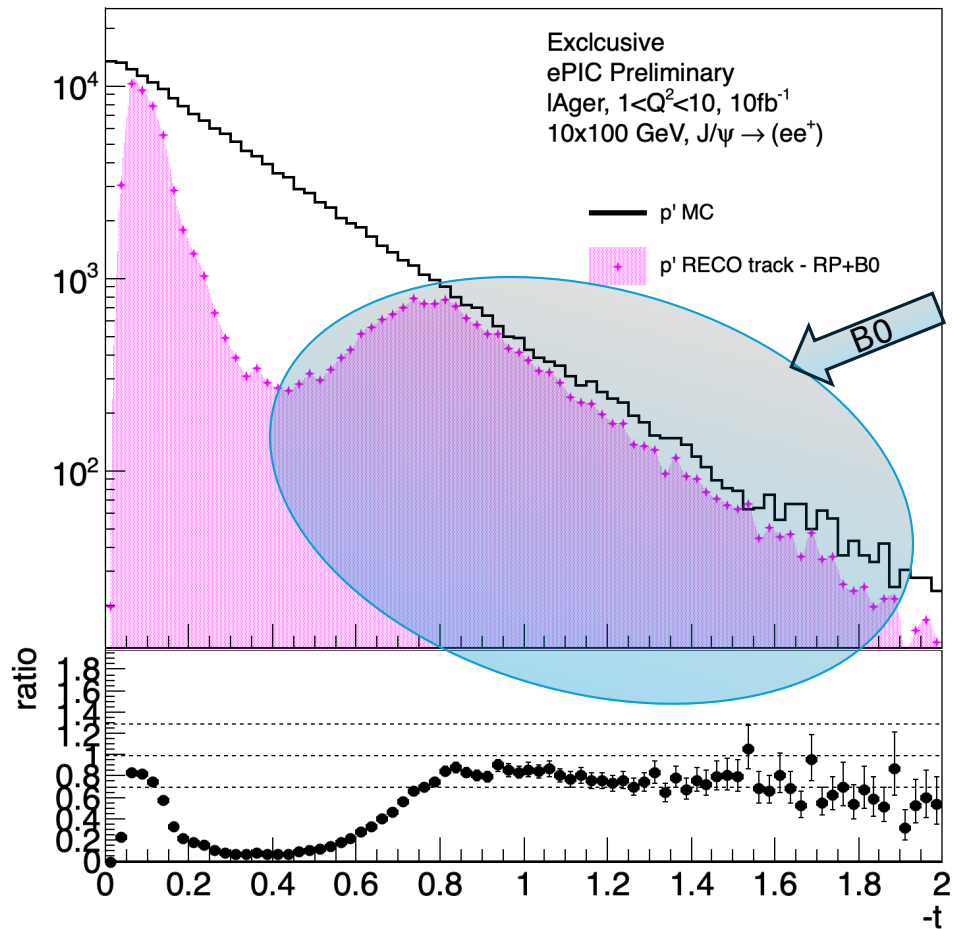


Kinematic Variables

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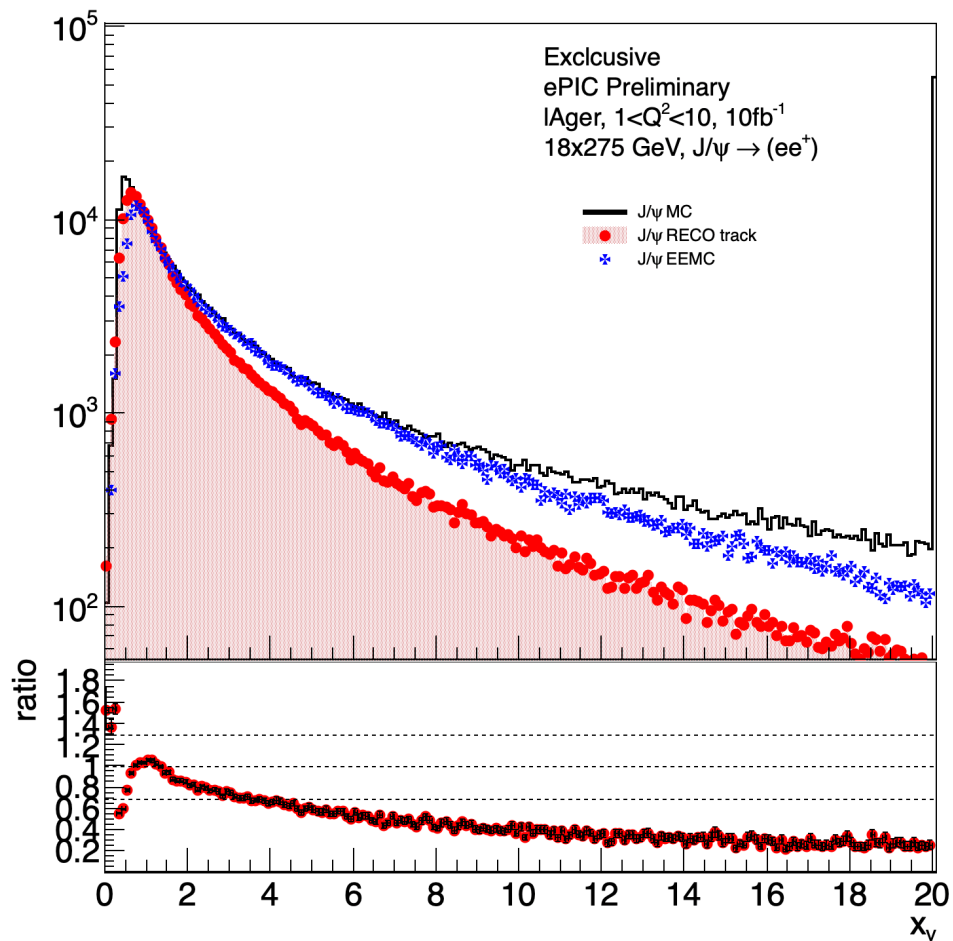


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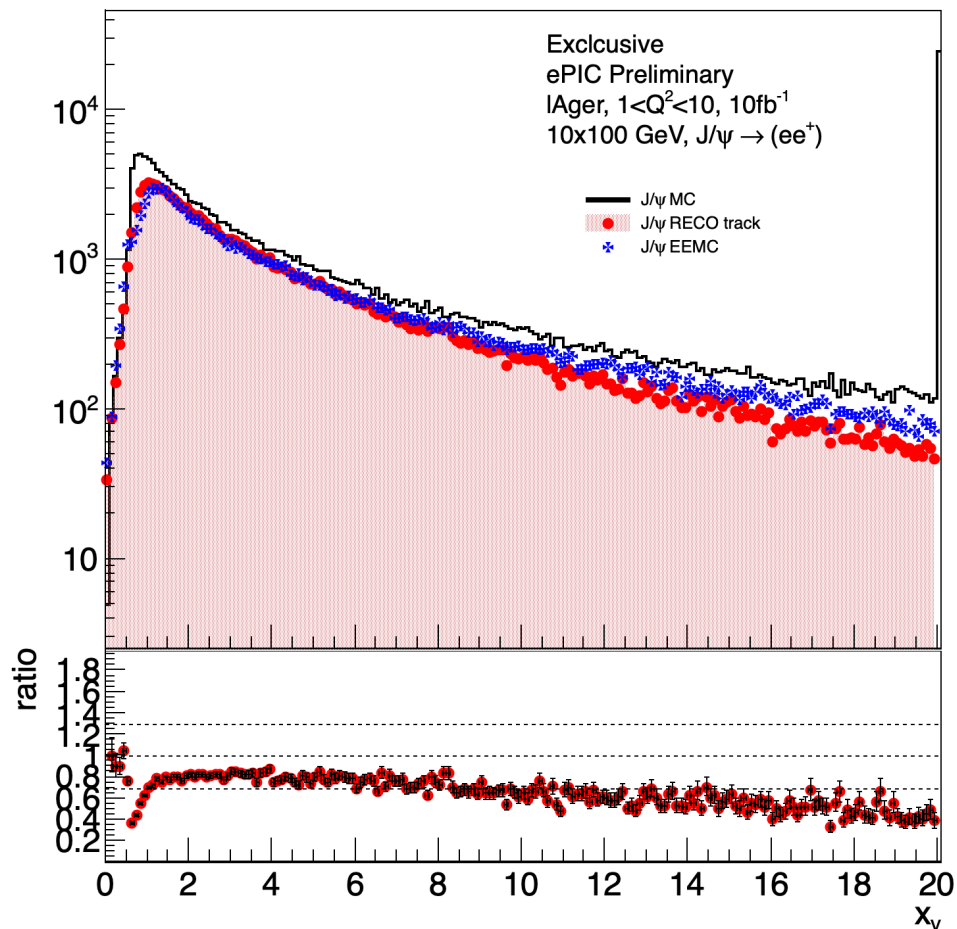


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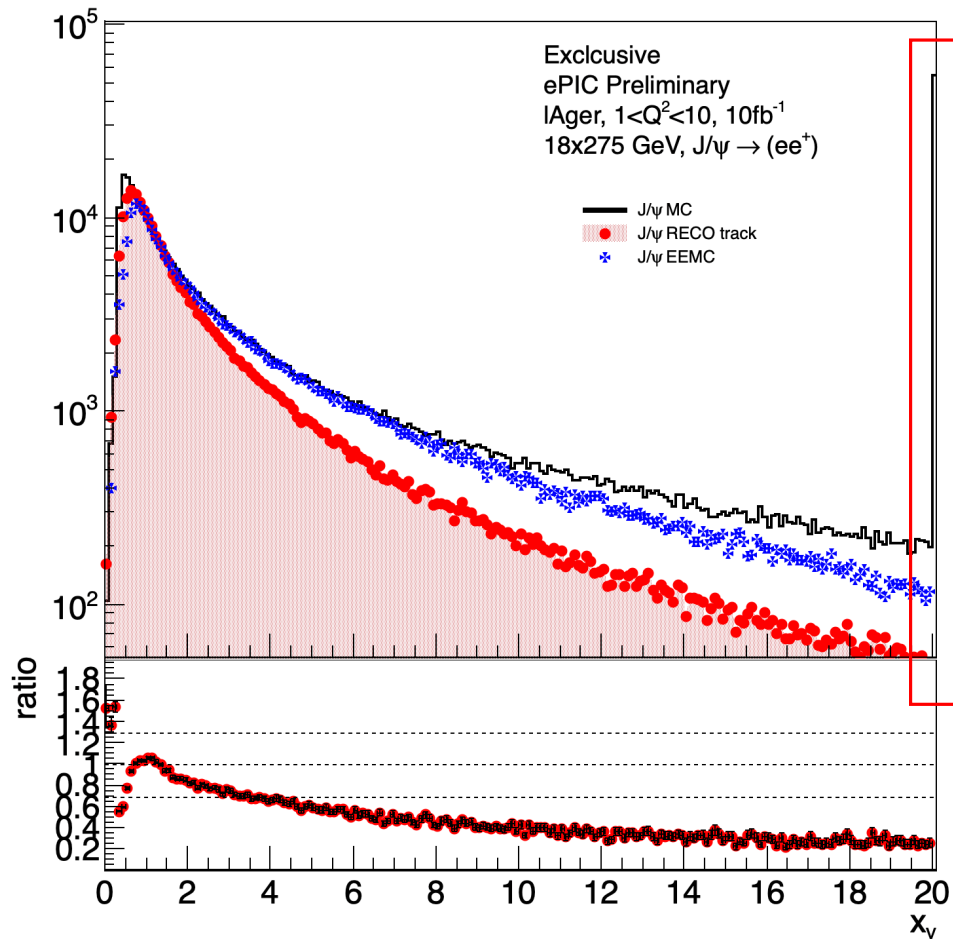


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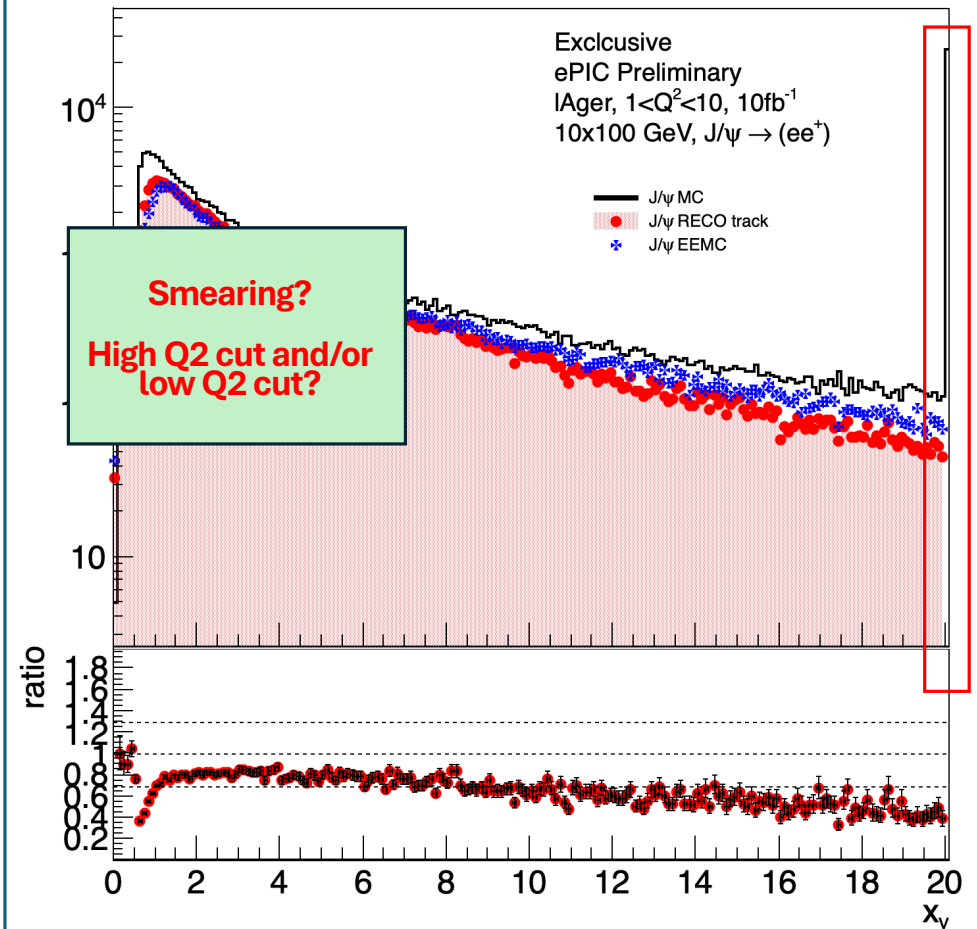


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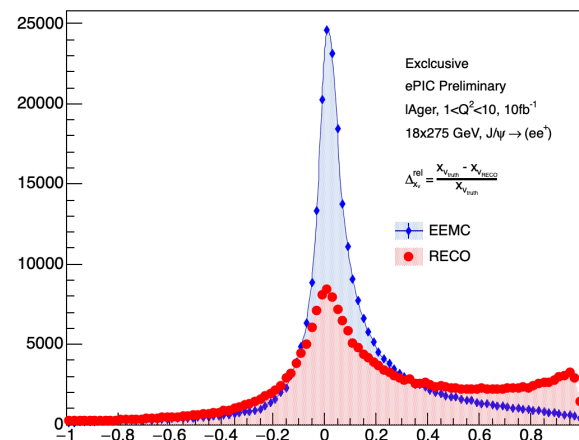
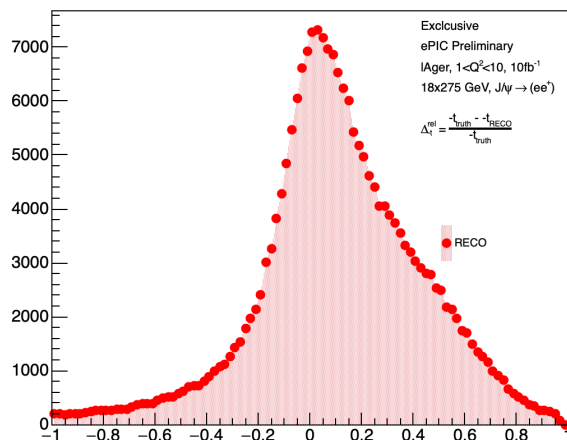
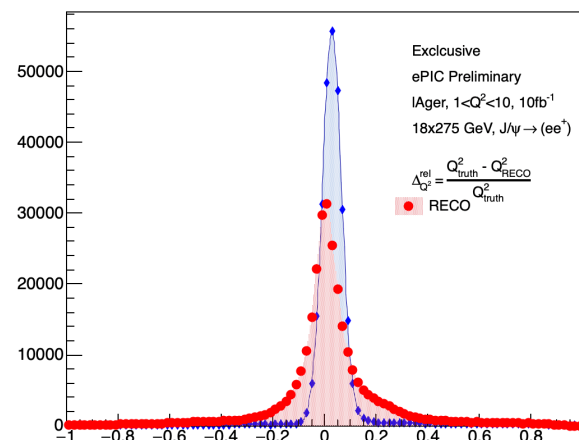
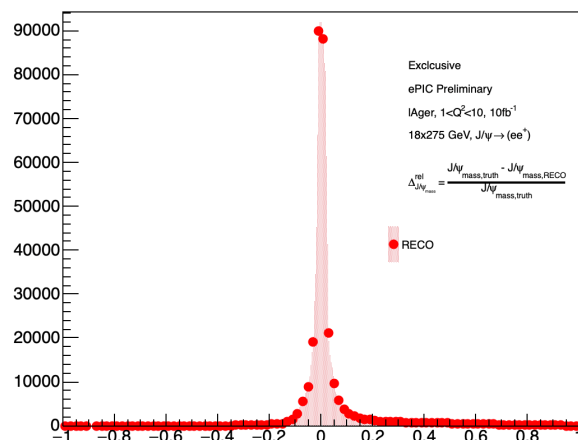


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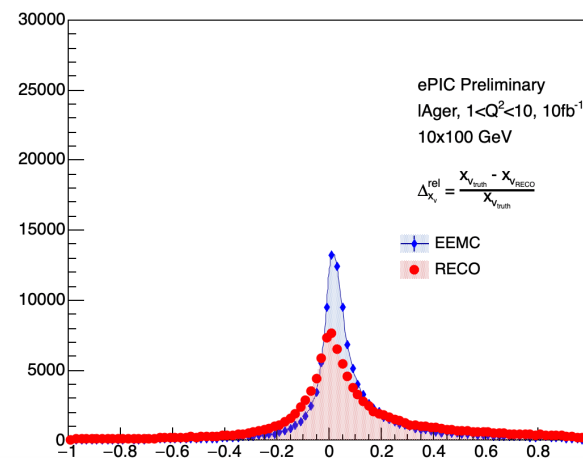
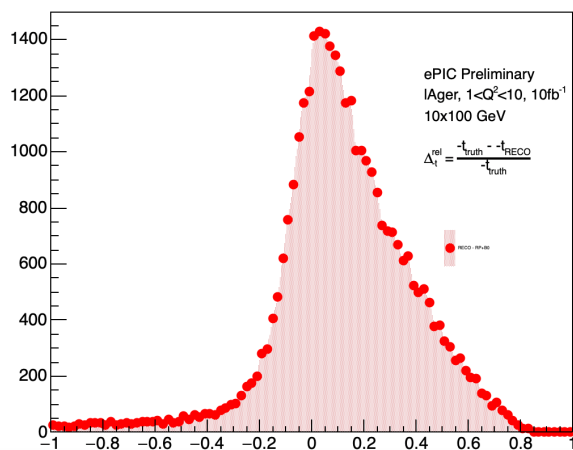
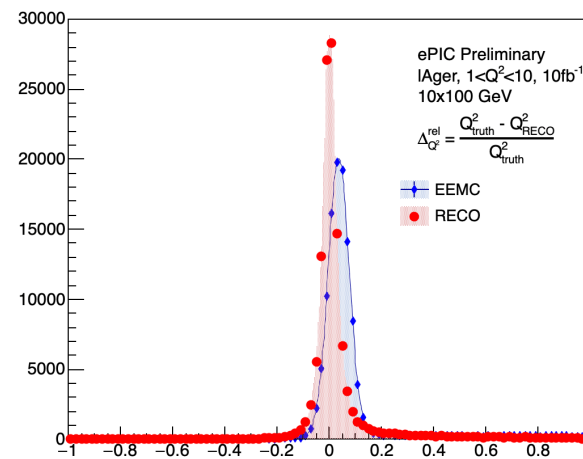
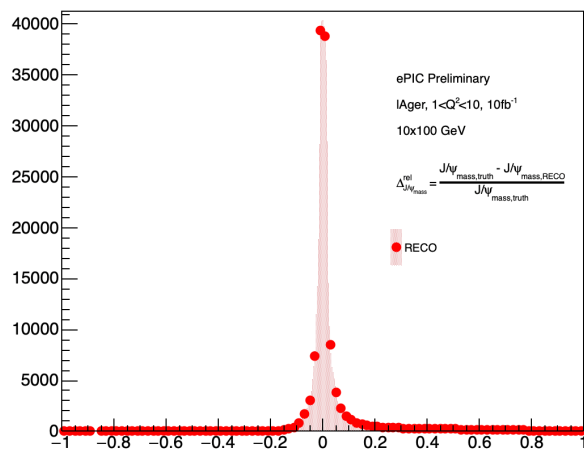
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Kinematic Variables



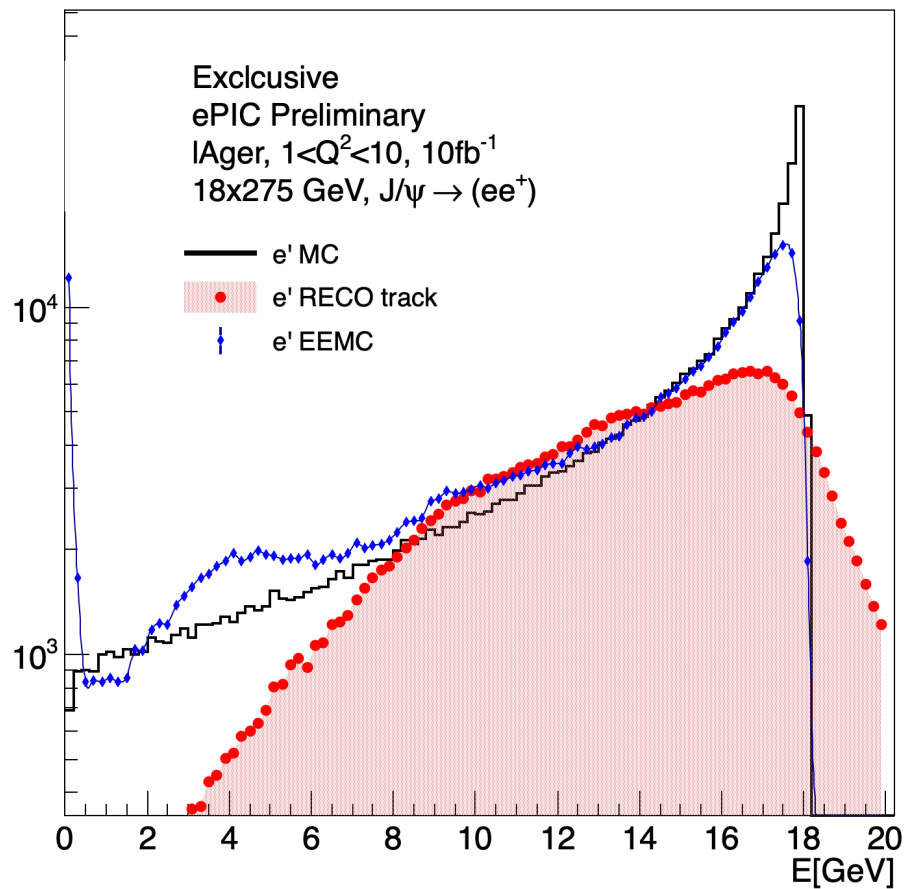
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Kinematic Variables

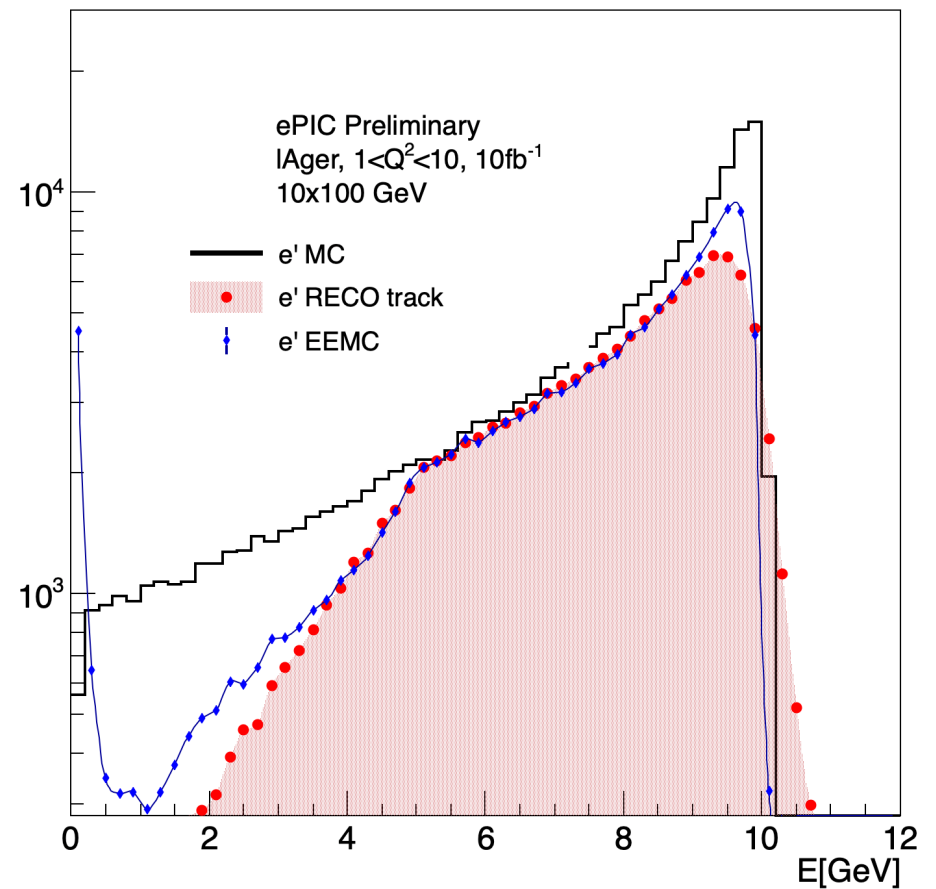


Kinematic Variables

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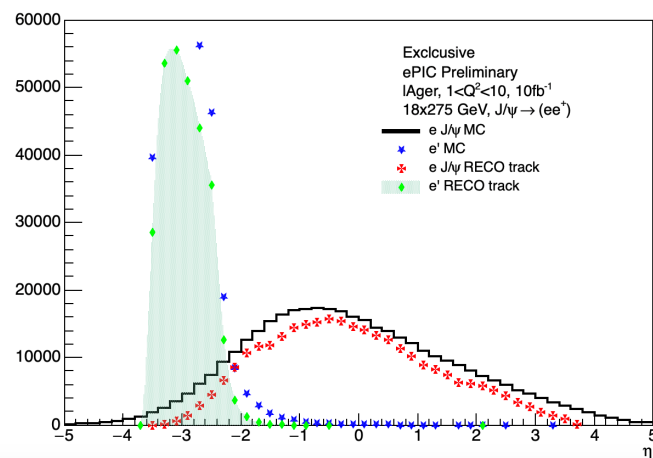
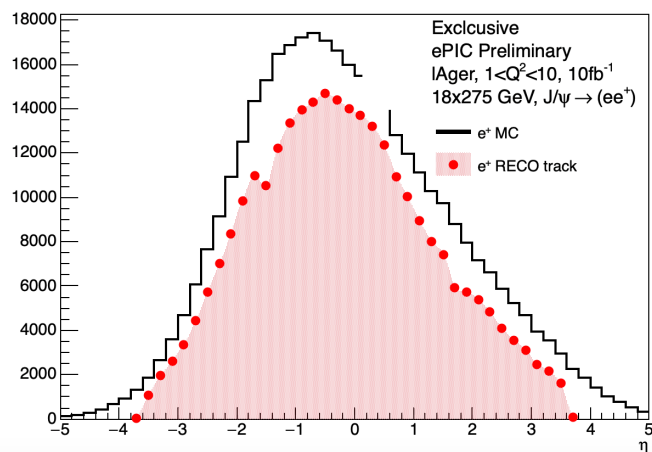
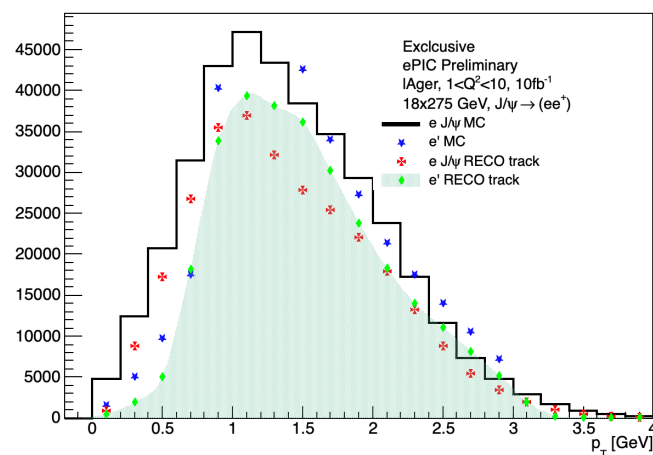
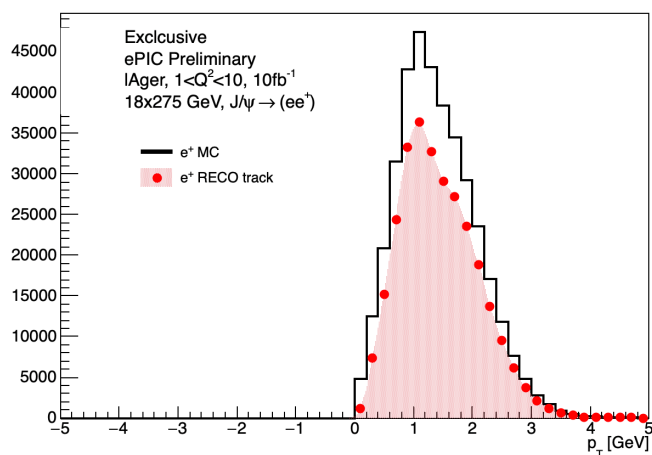


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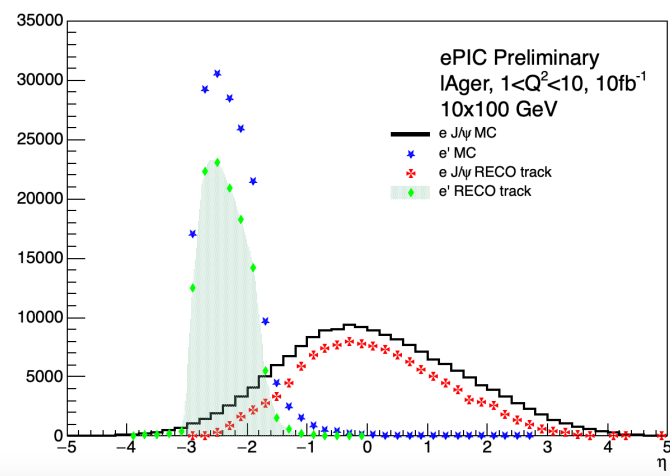
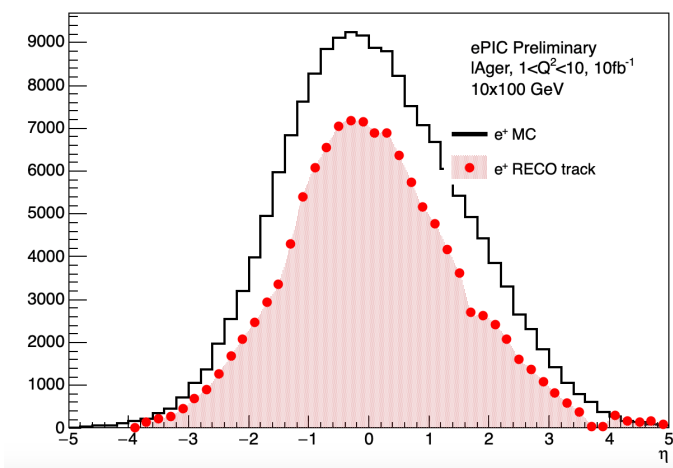
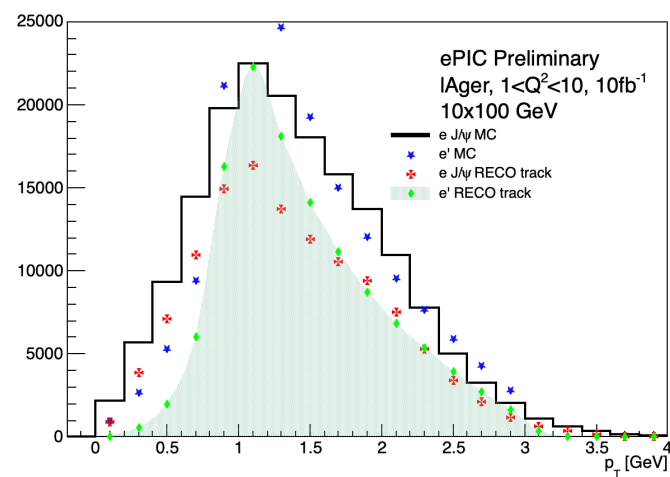
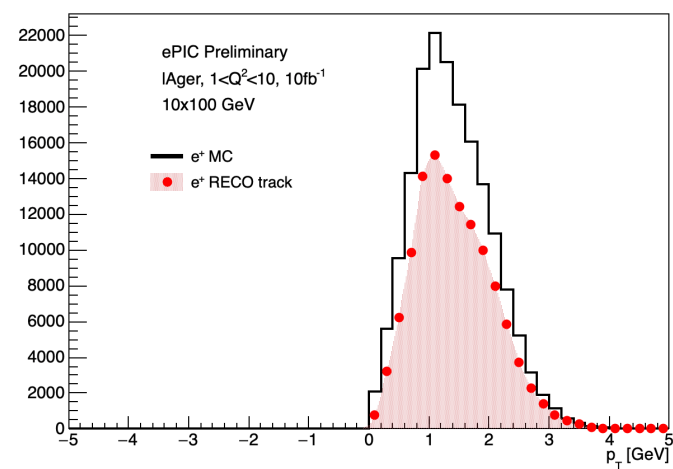
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Kinematic Variables



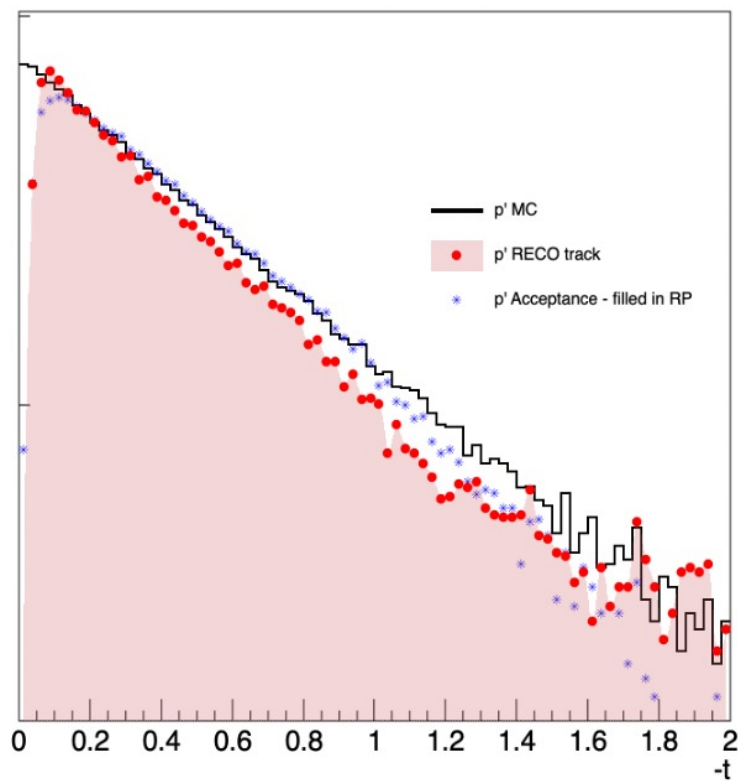
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Kinematic Variables

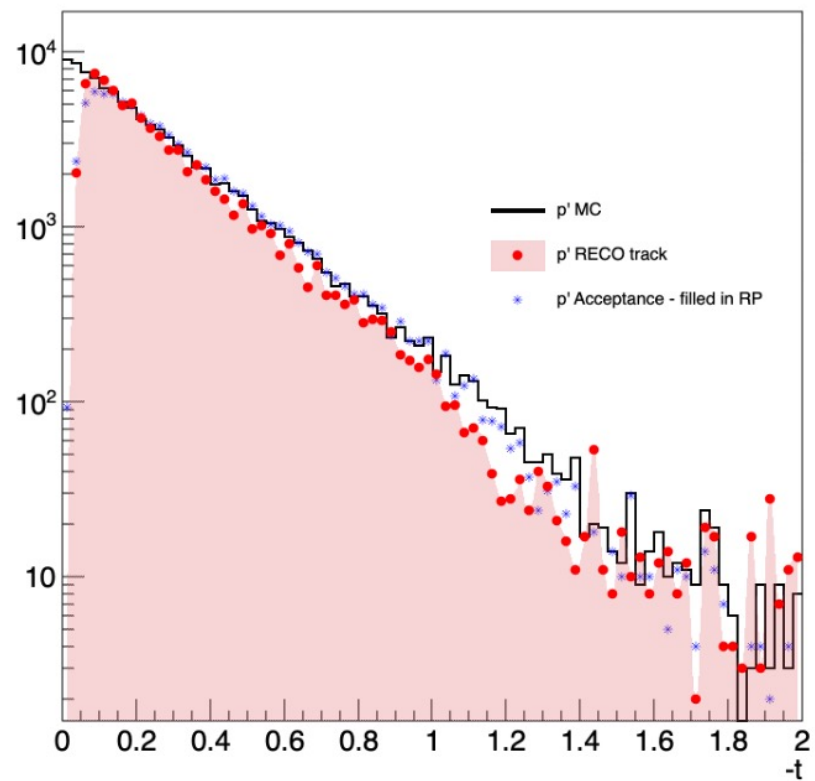


**Thank
You**

No p_z cut of 274 GeV

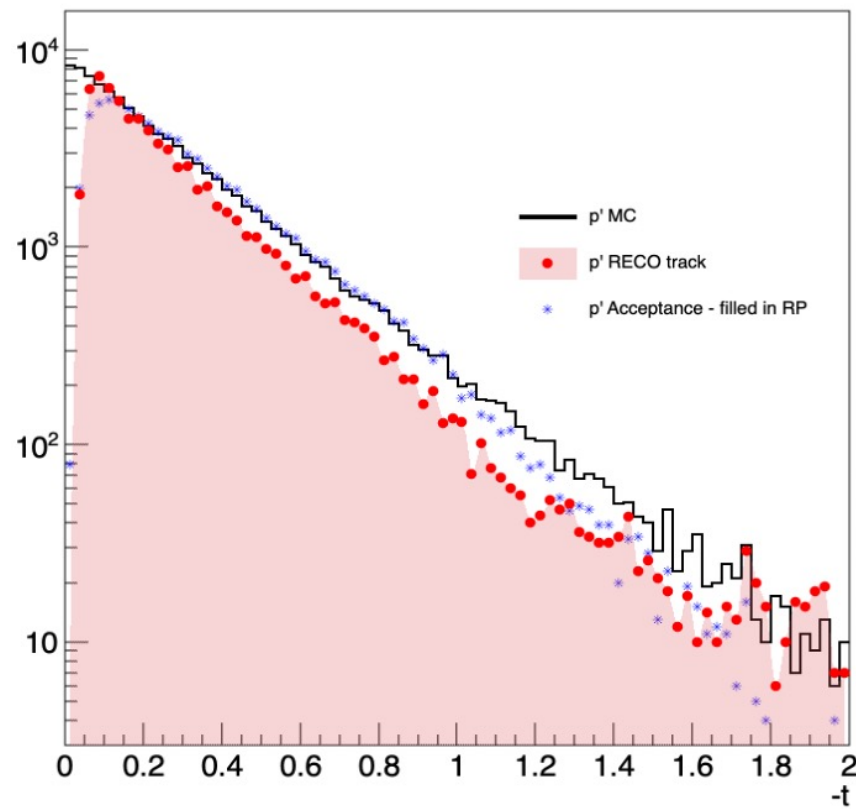


Has p_z cut of 274 GeV

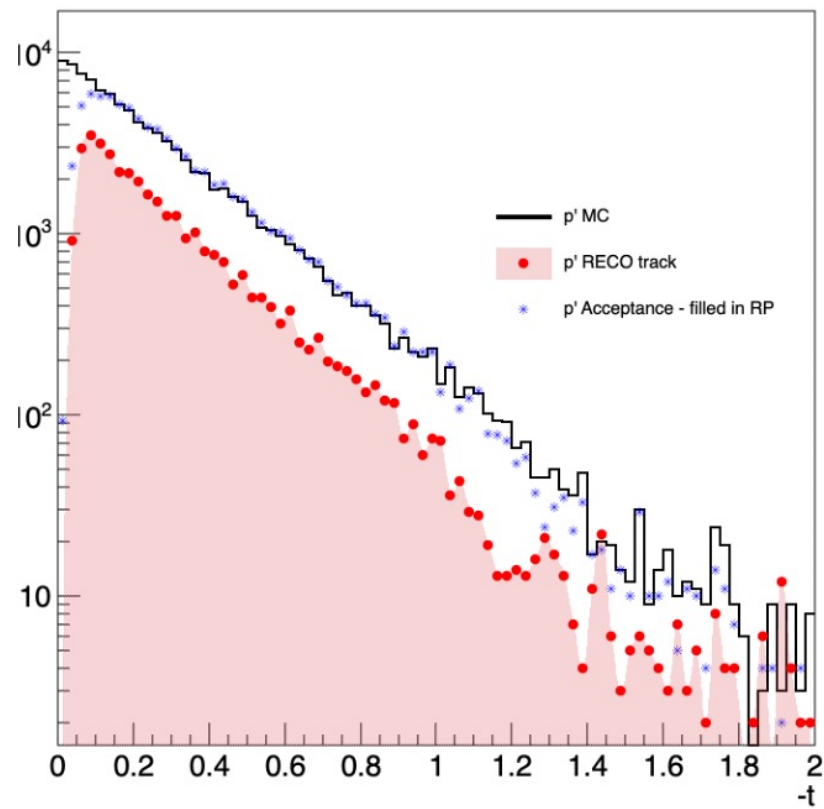


NonExclusive

No p_z cut of 274 GeV



Has p_z cut of 274 GeV



Exclusive