

Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

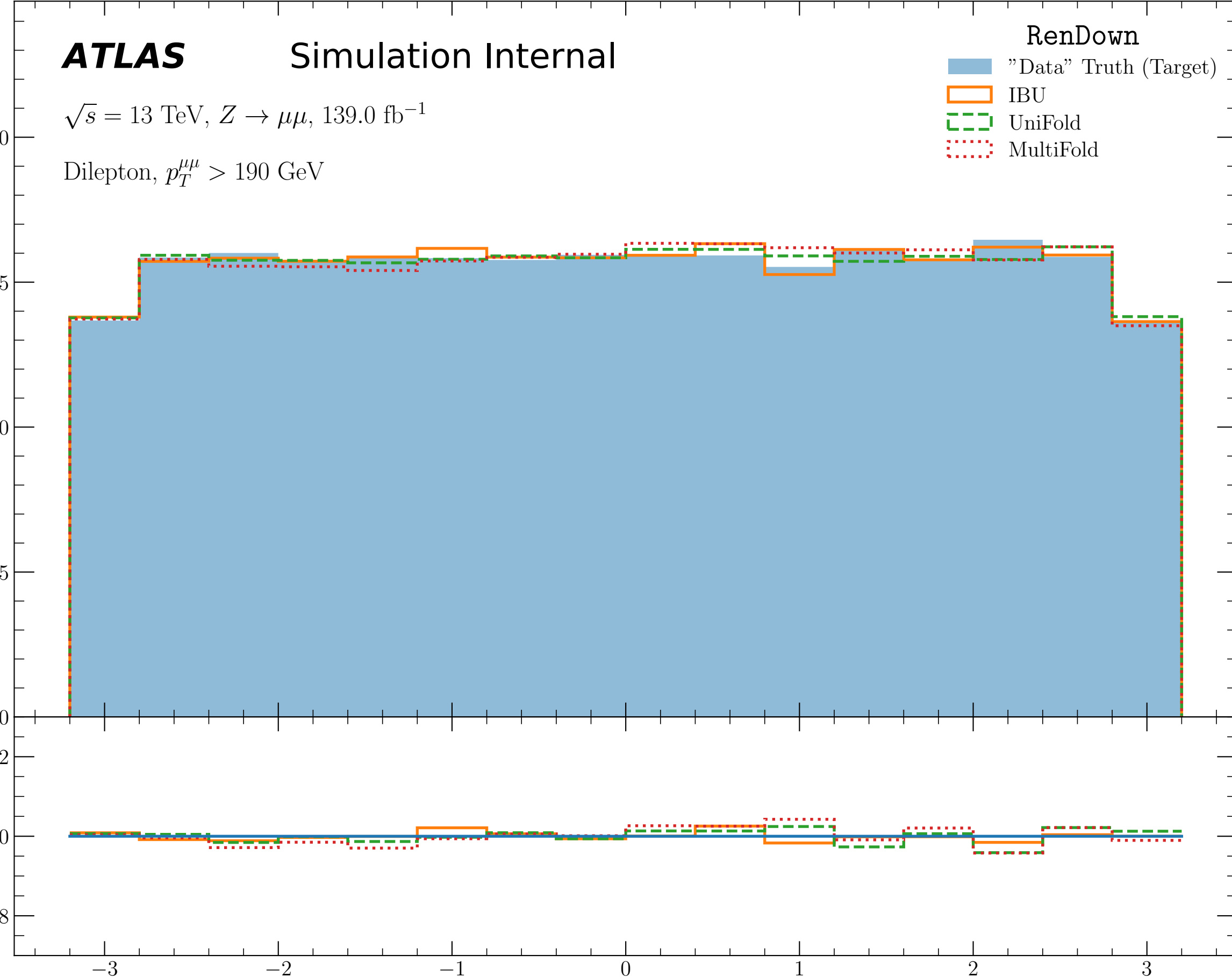
RenDown

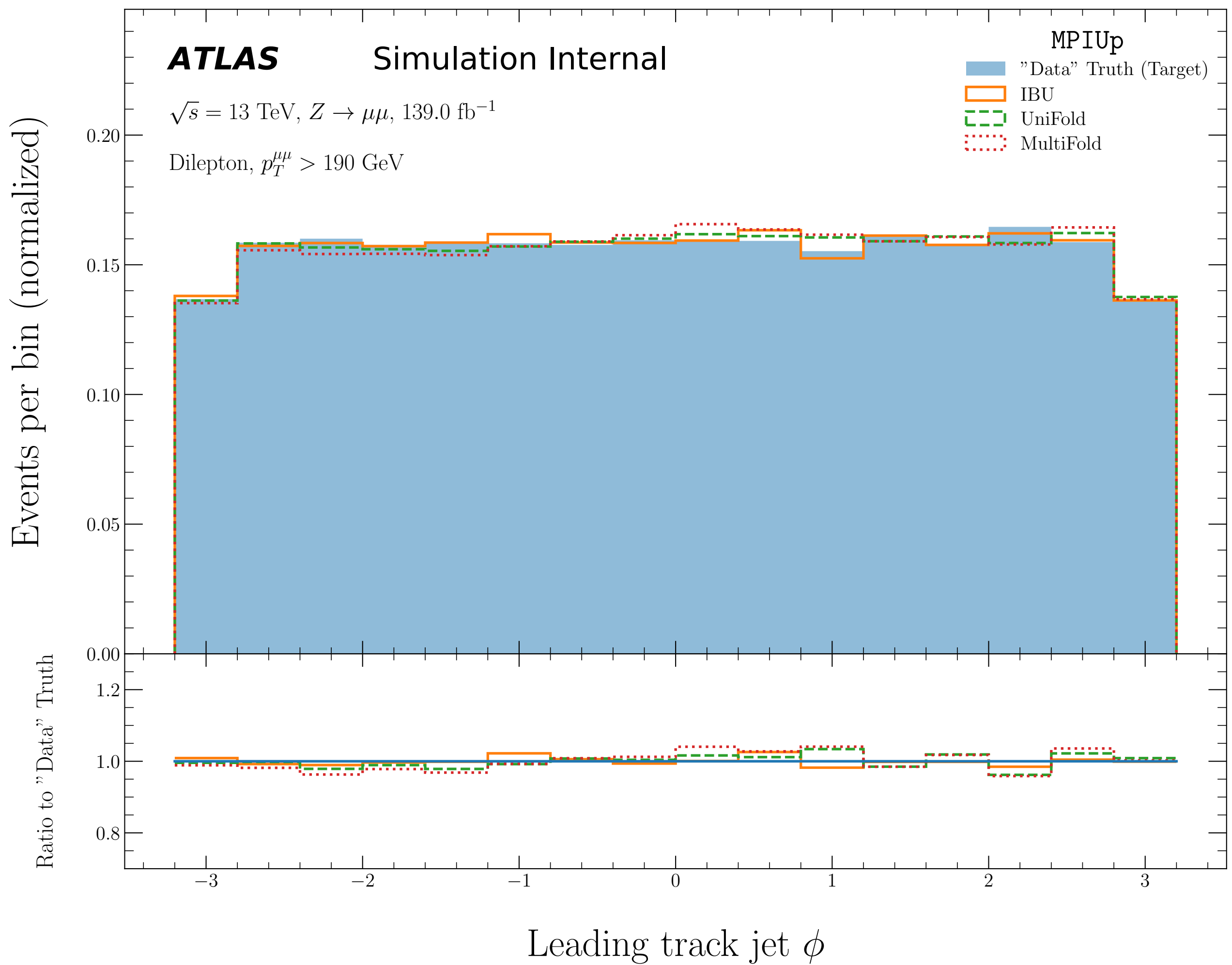
- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

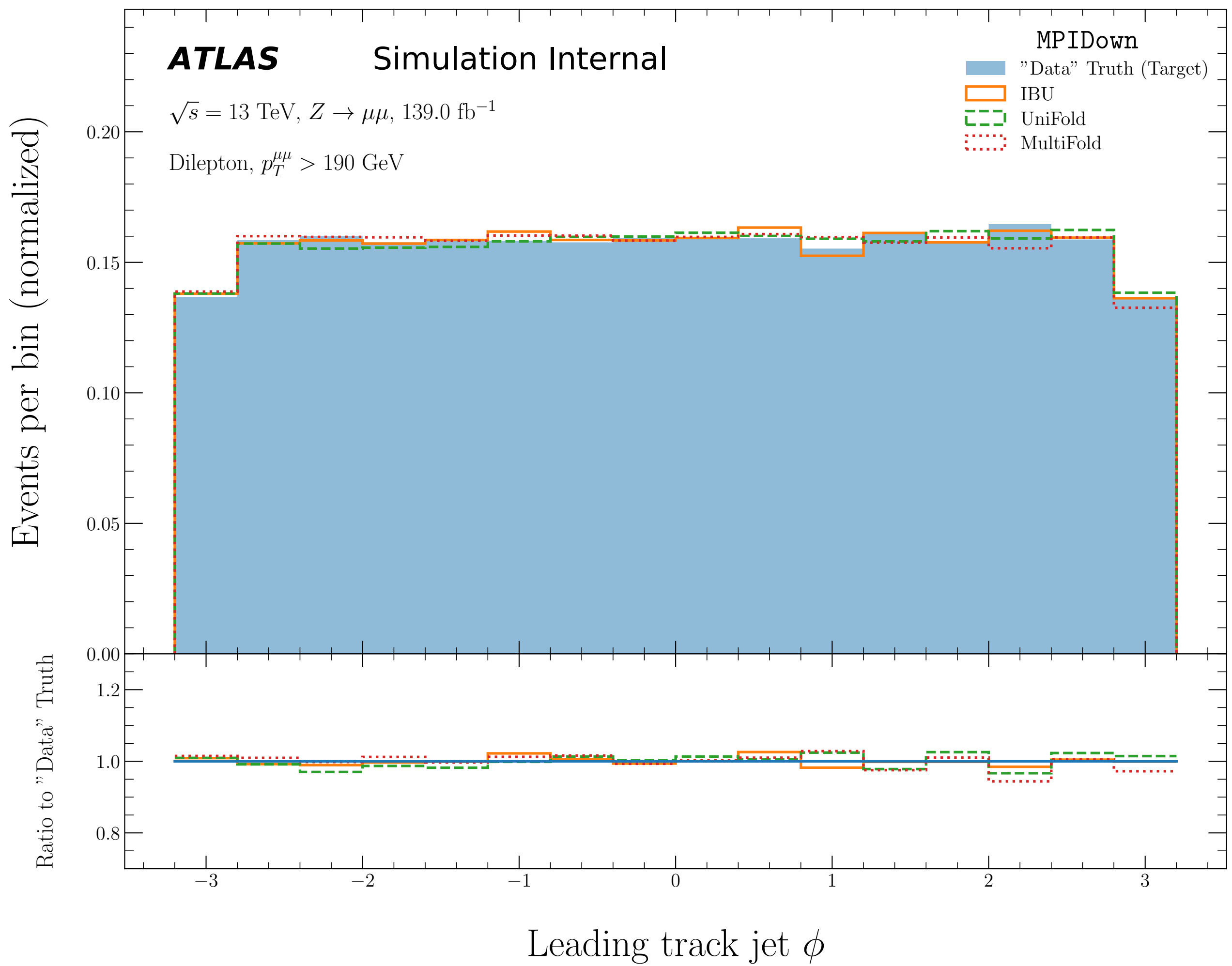
0.20  
0.15  
0.10  
0.05  
0.00  
1.2  
1.0  
0.8

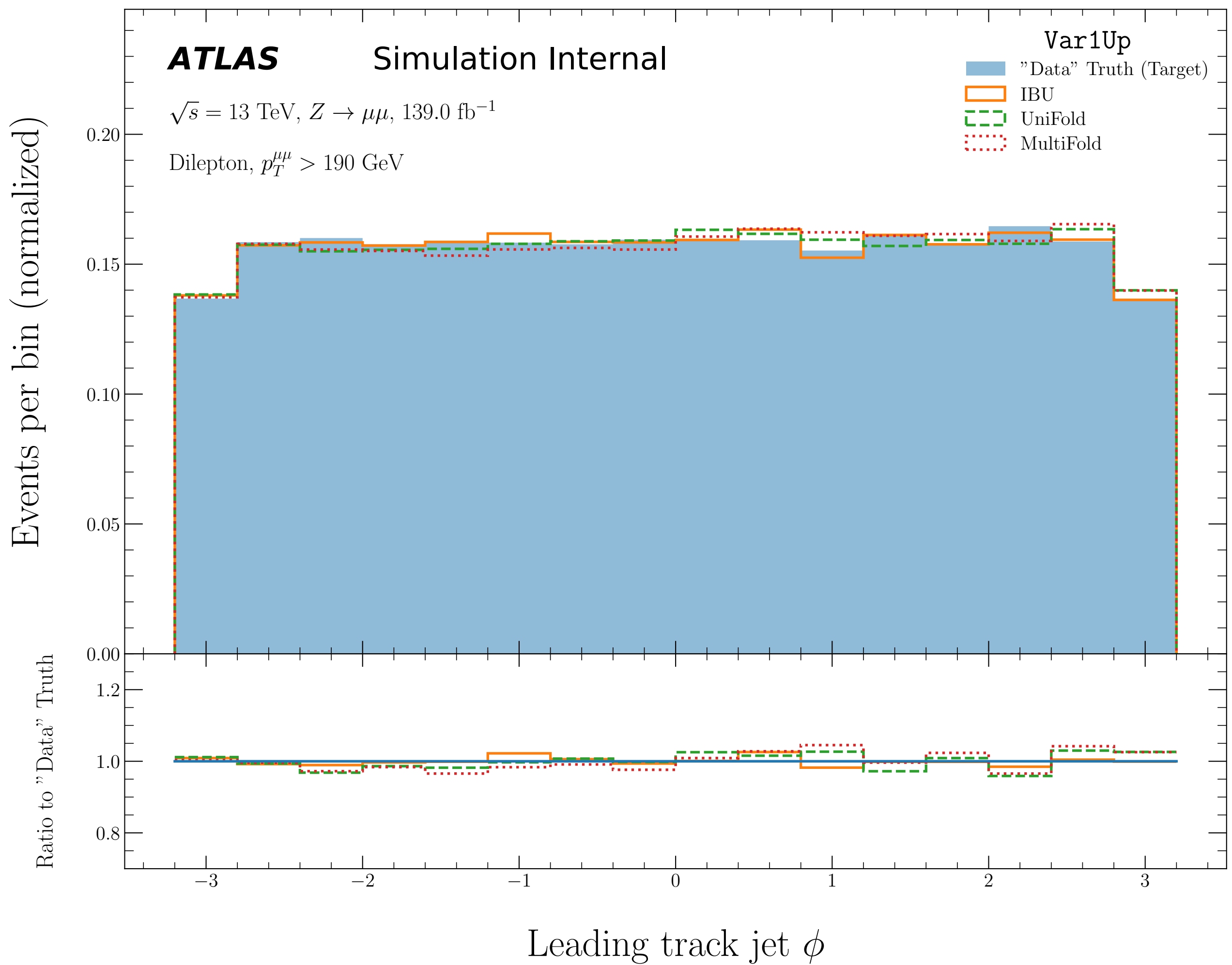
Ratio to "Data" Truth

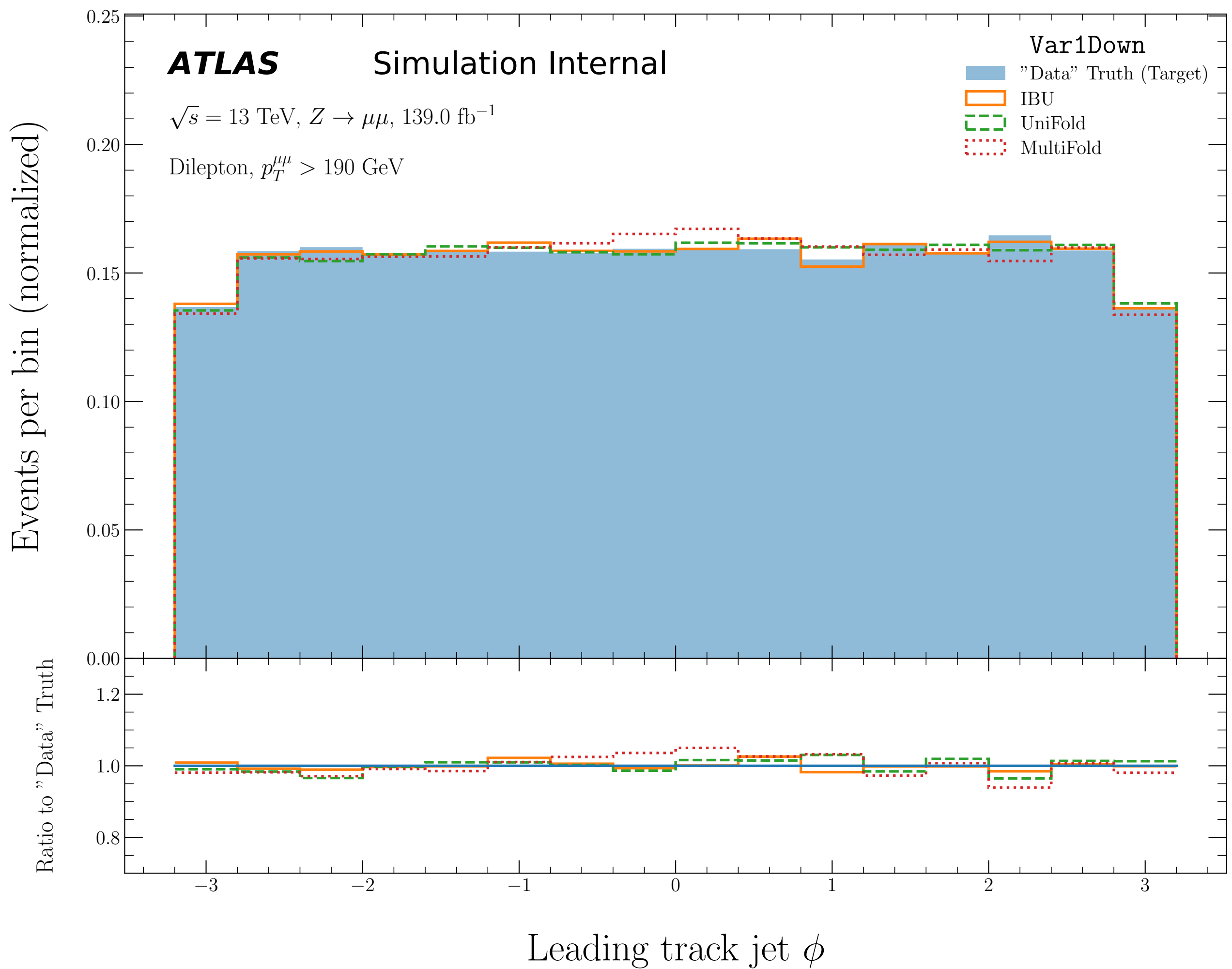
Leading track jet  $\phi$

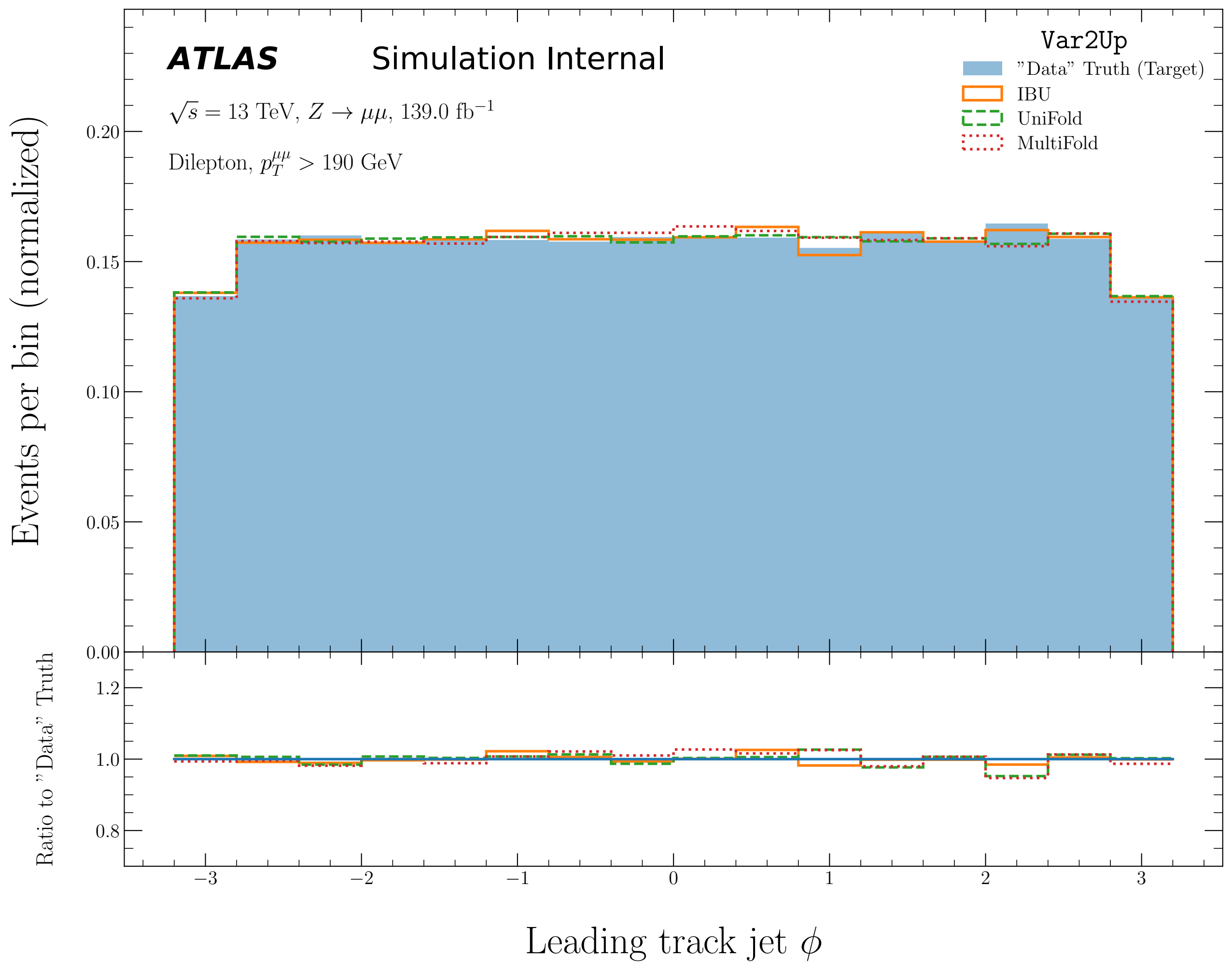


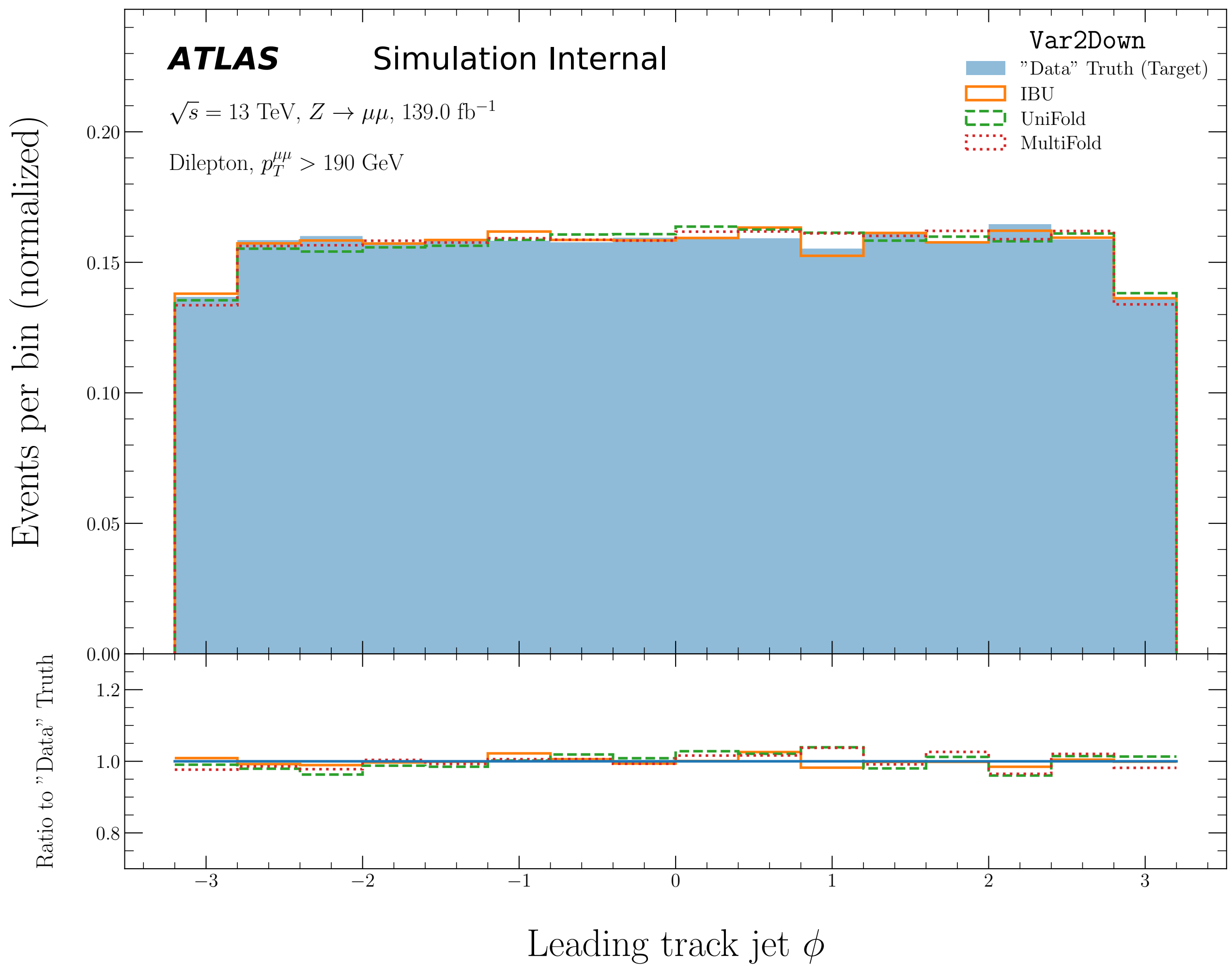




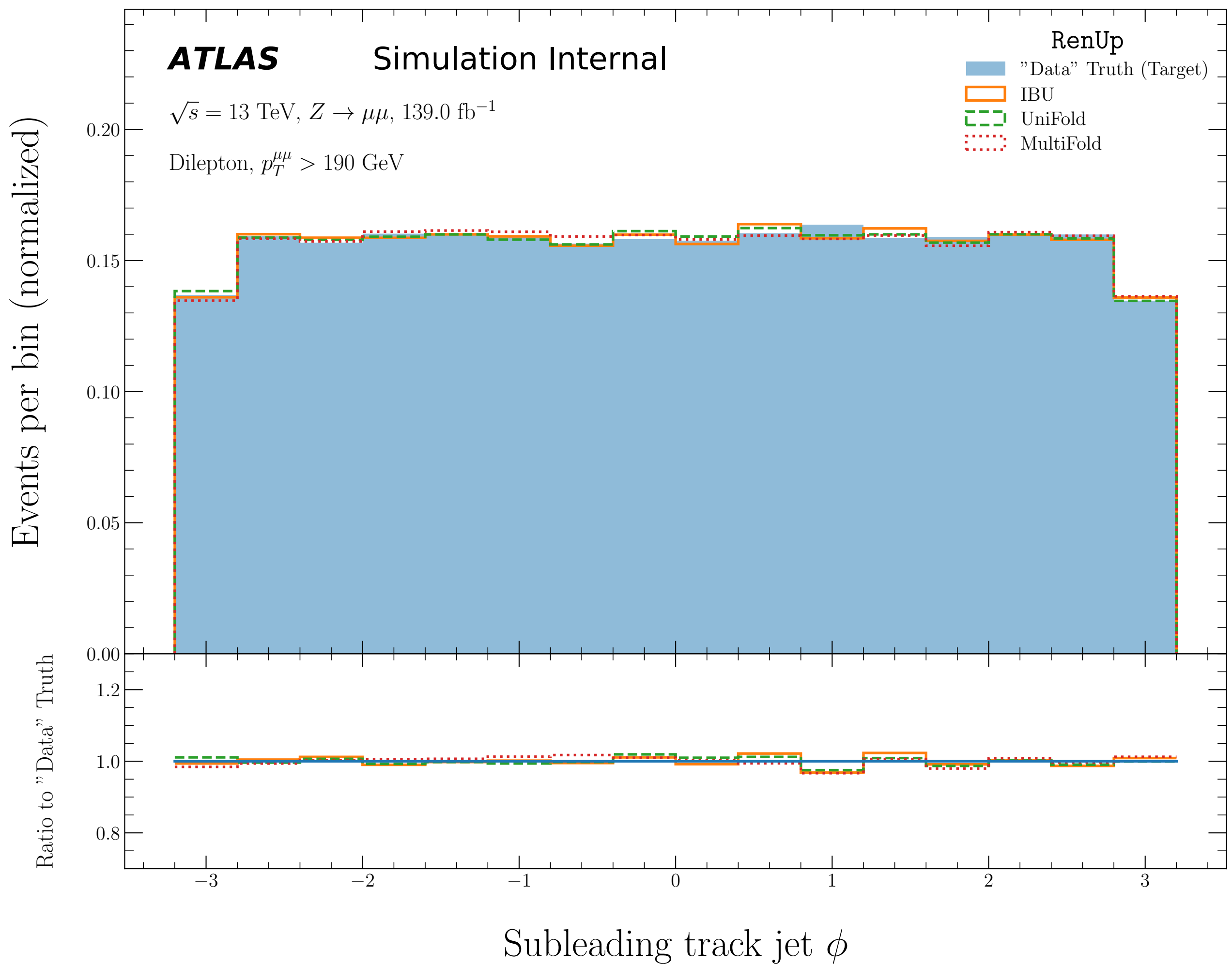


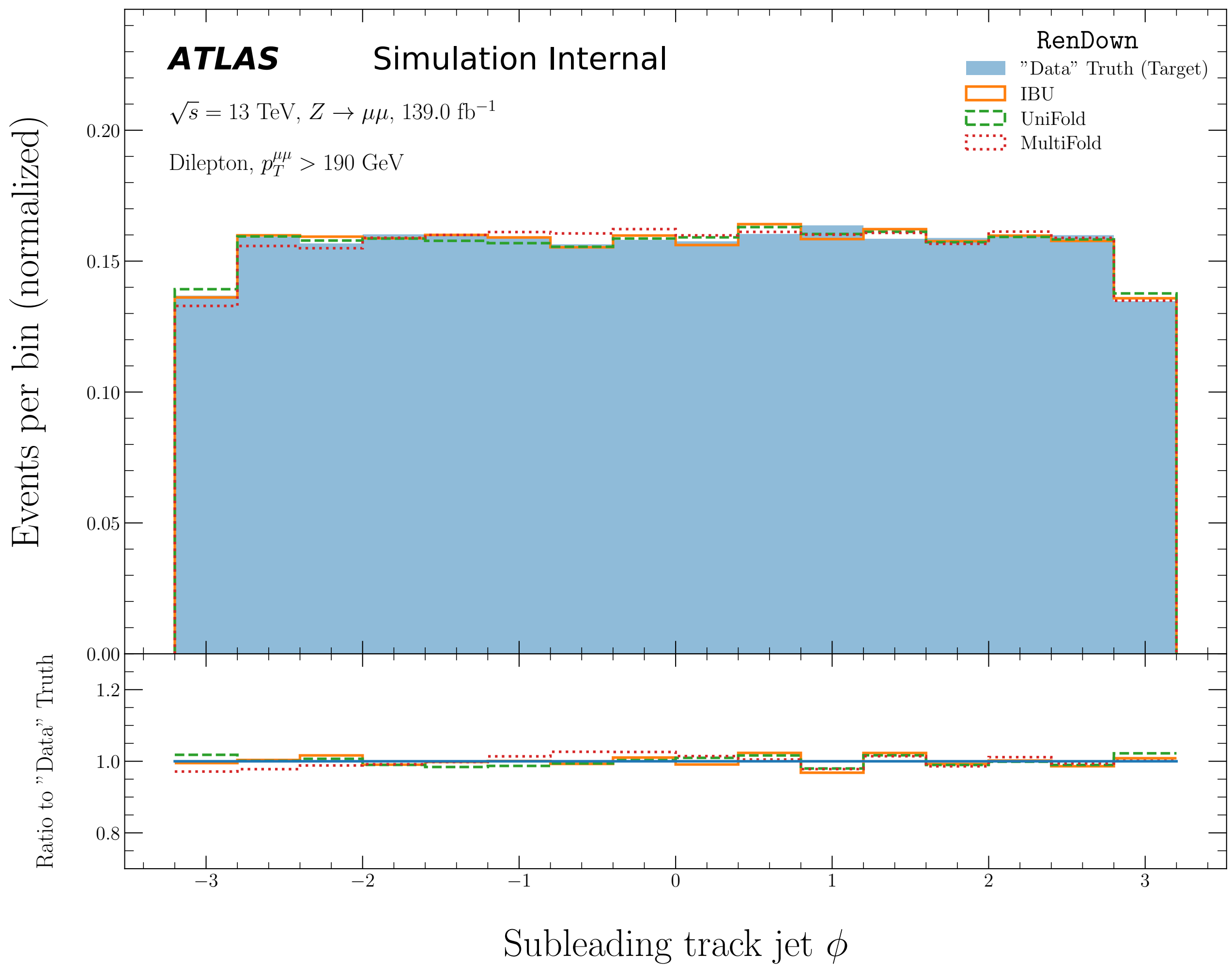


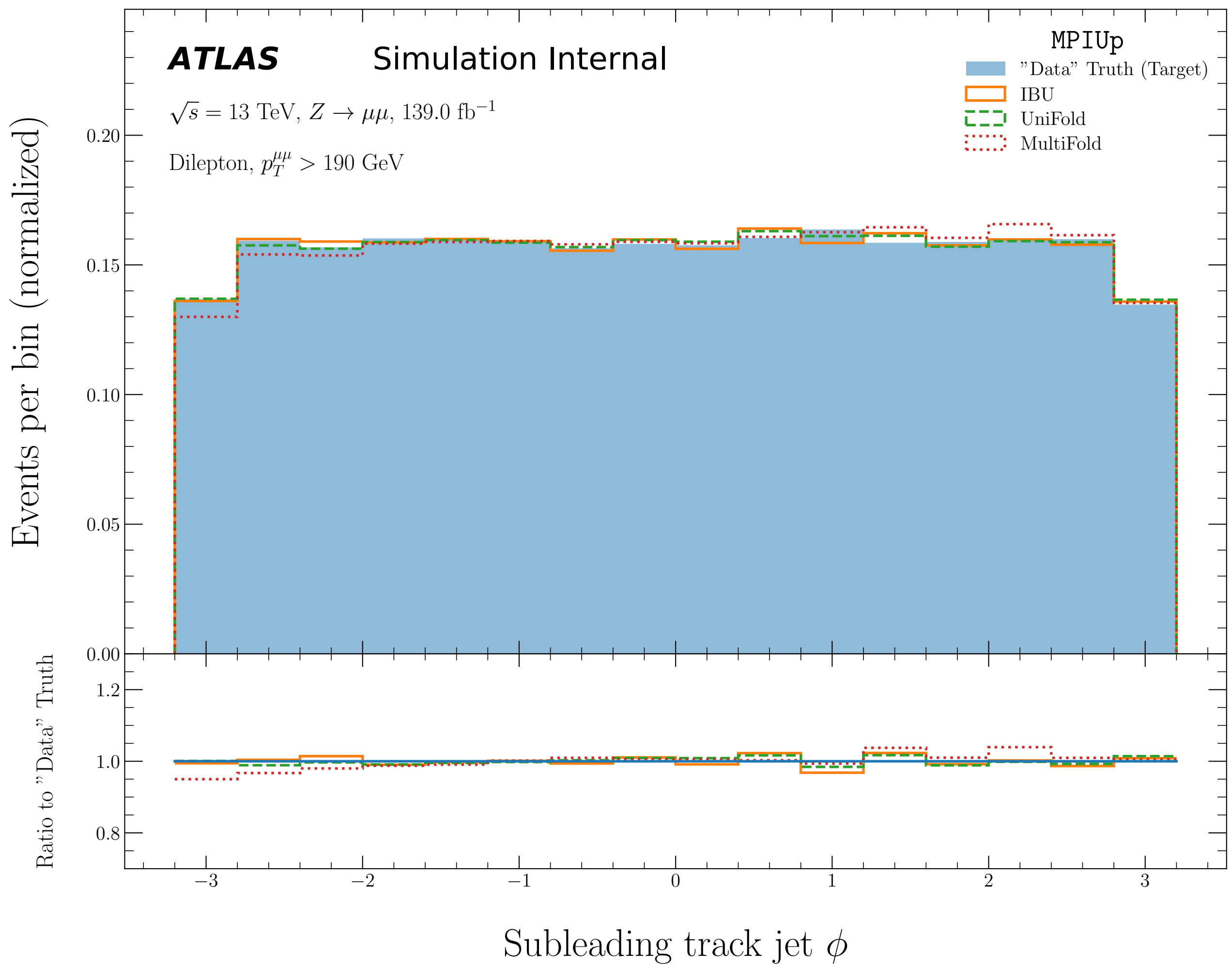


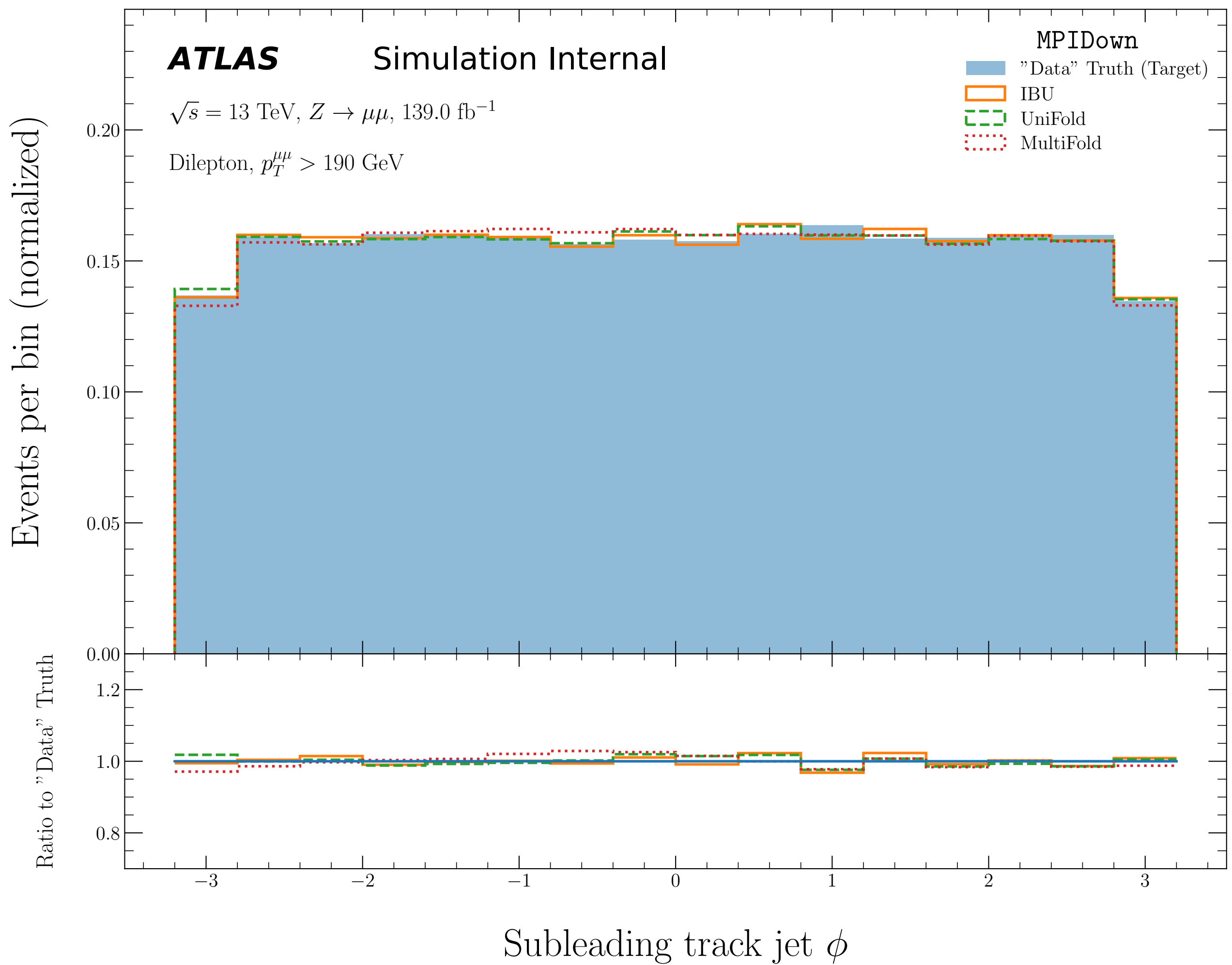


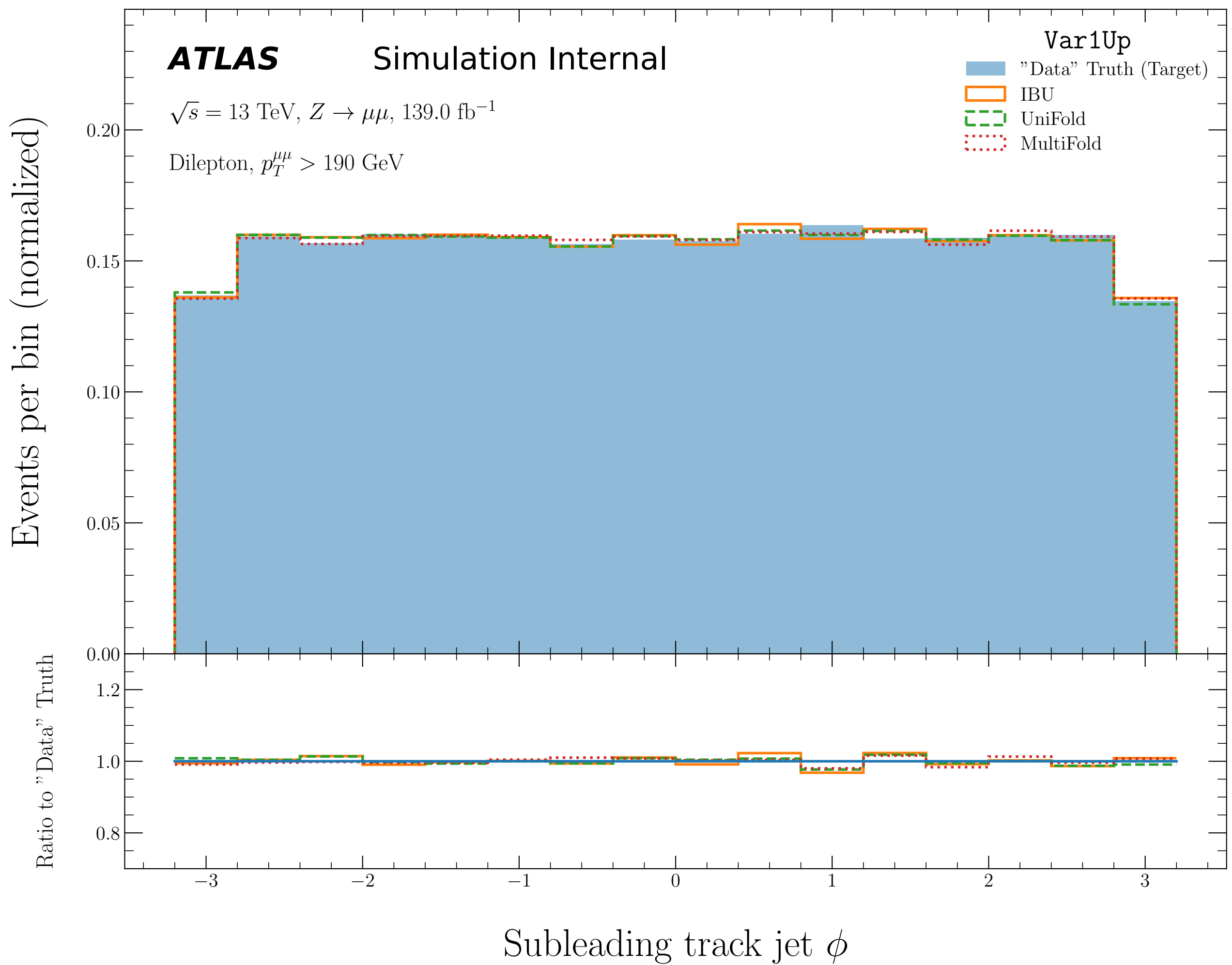


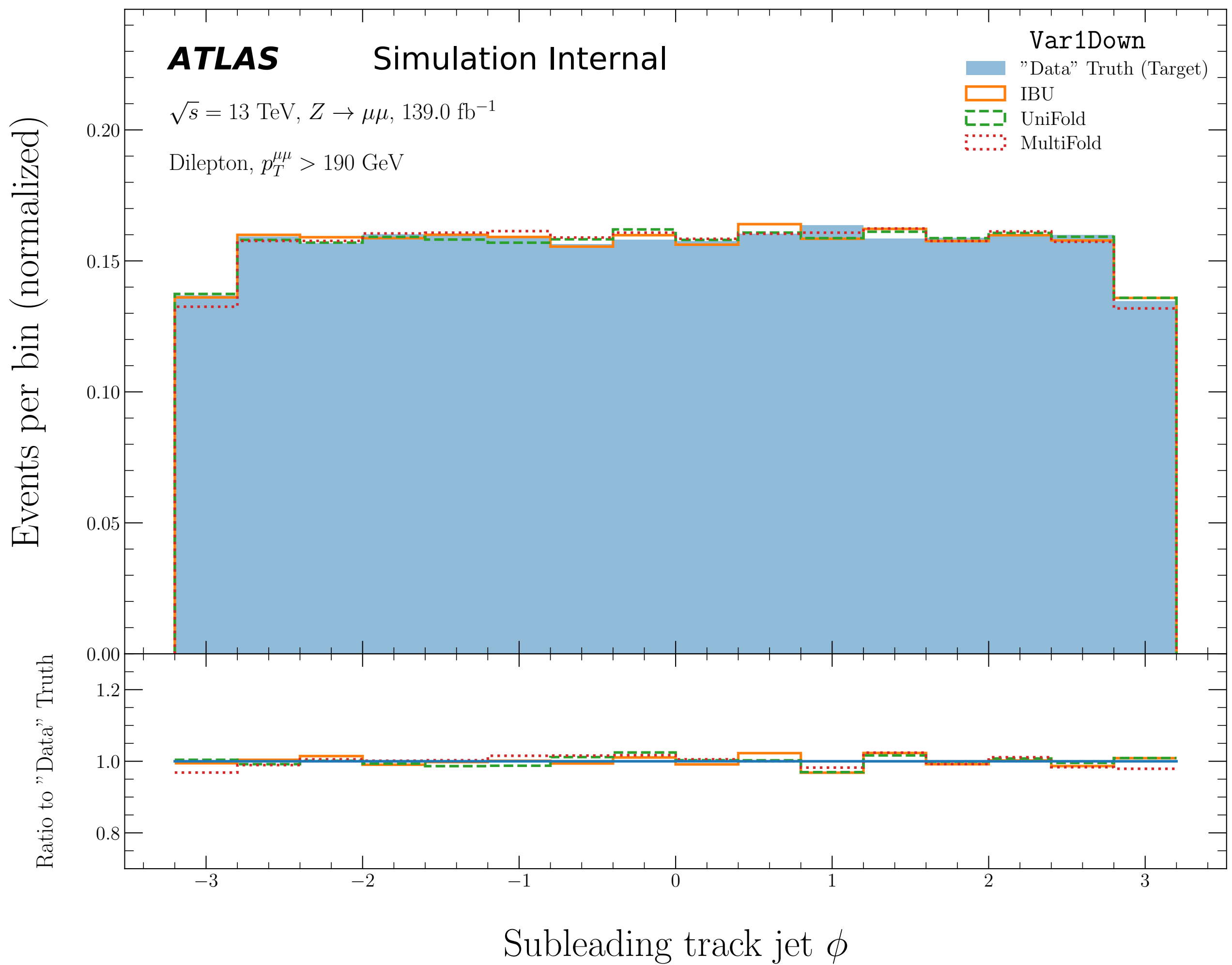


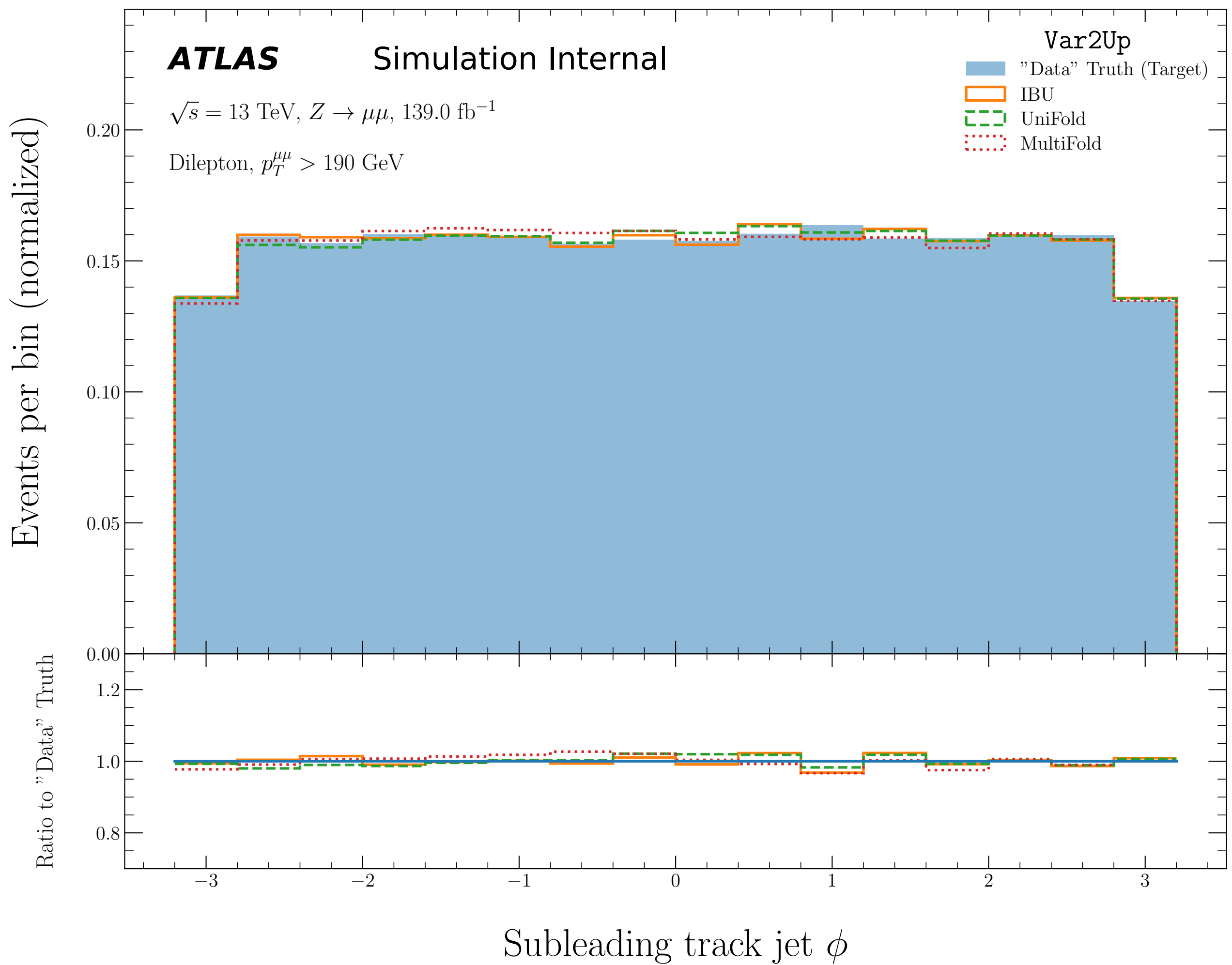


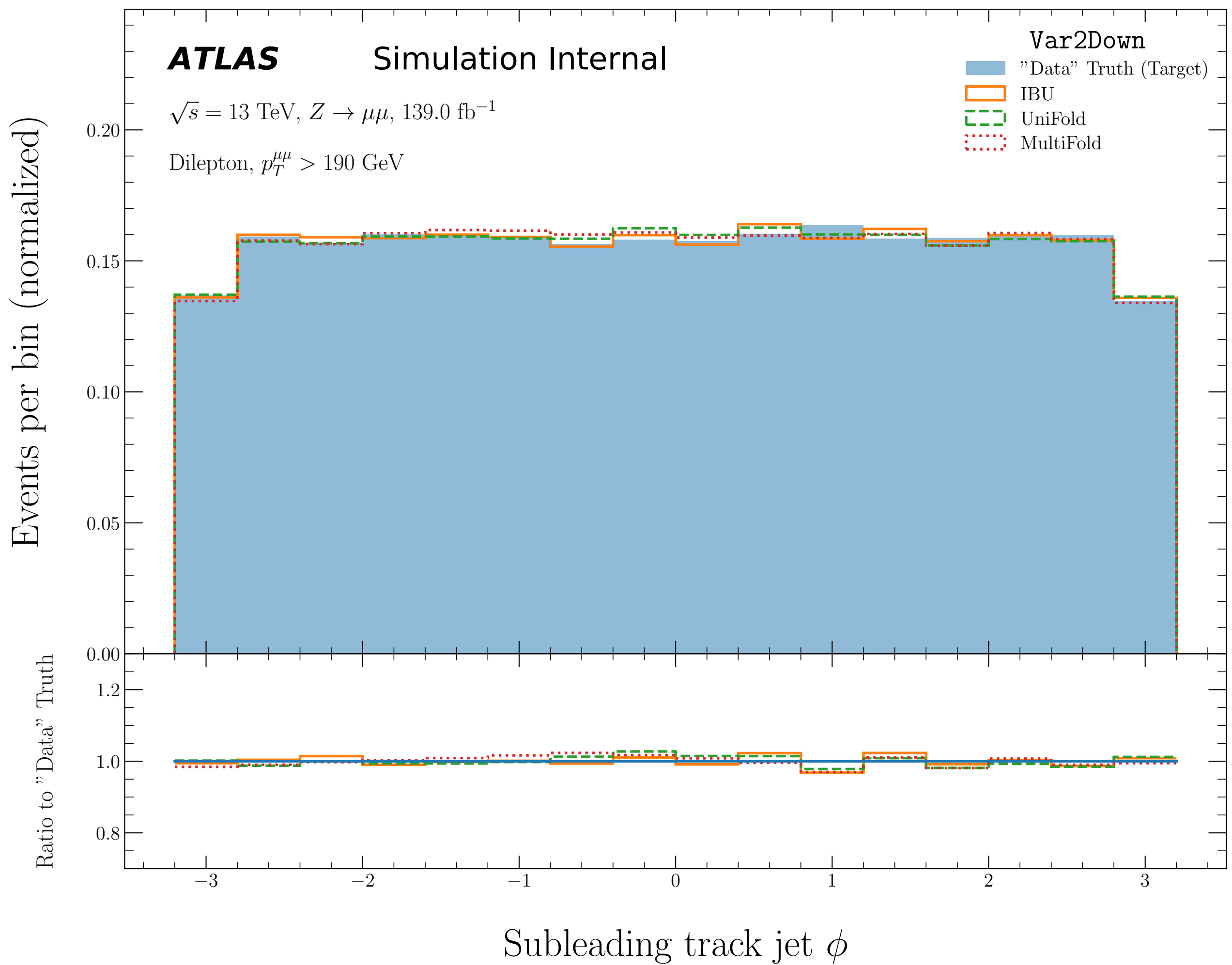




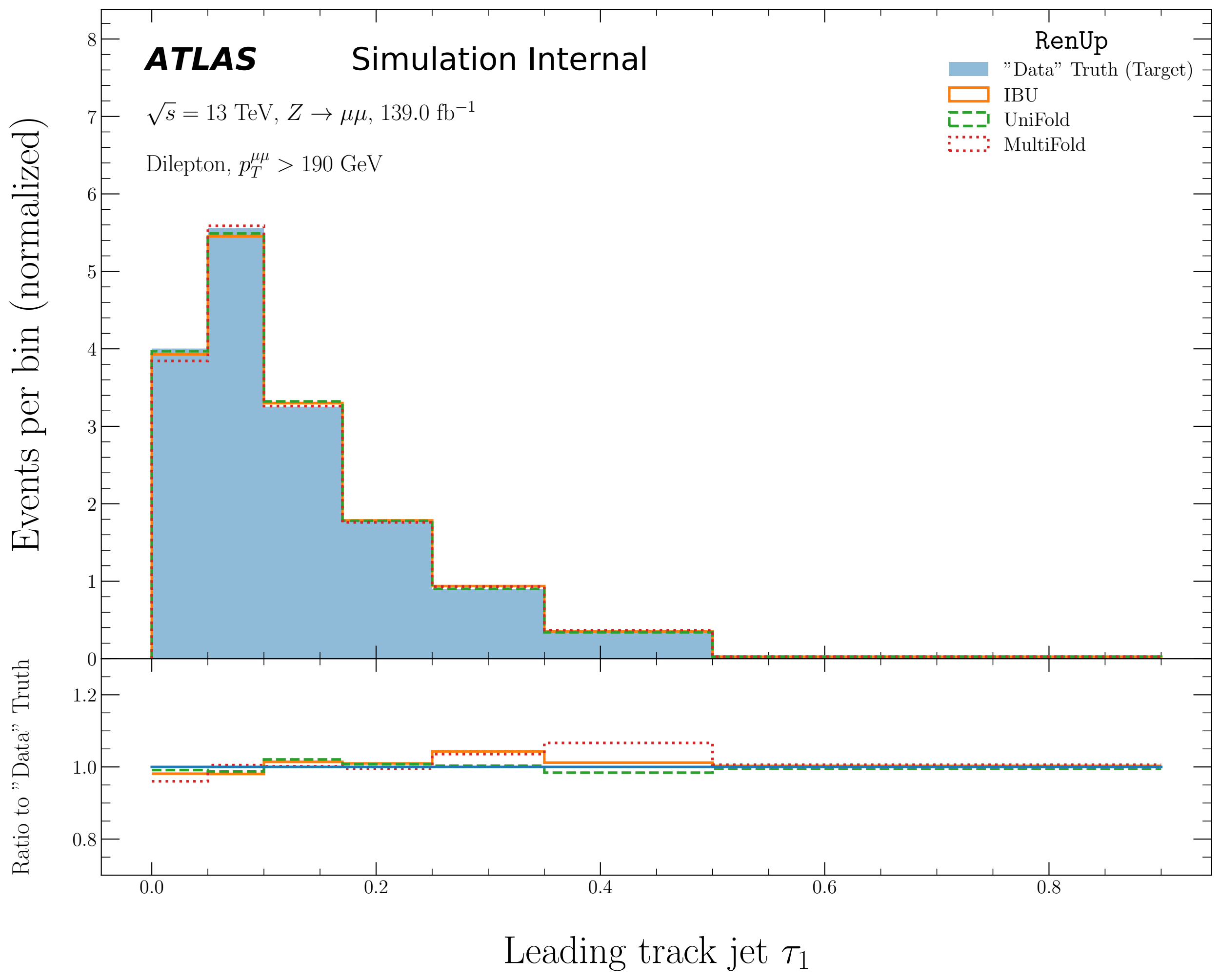


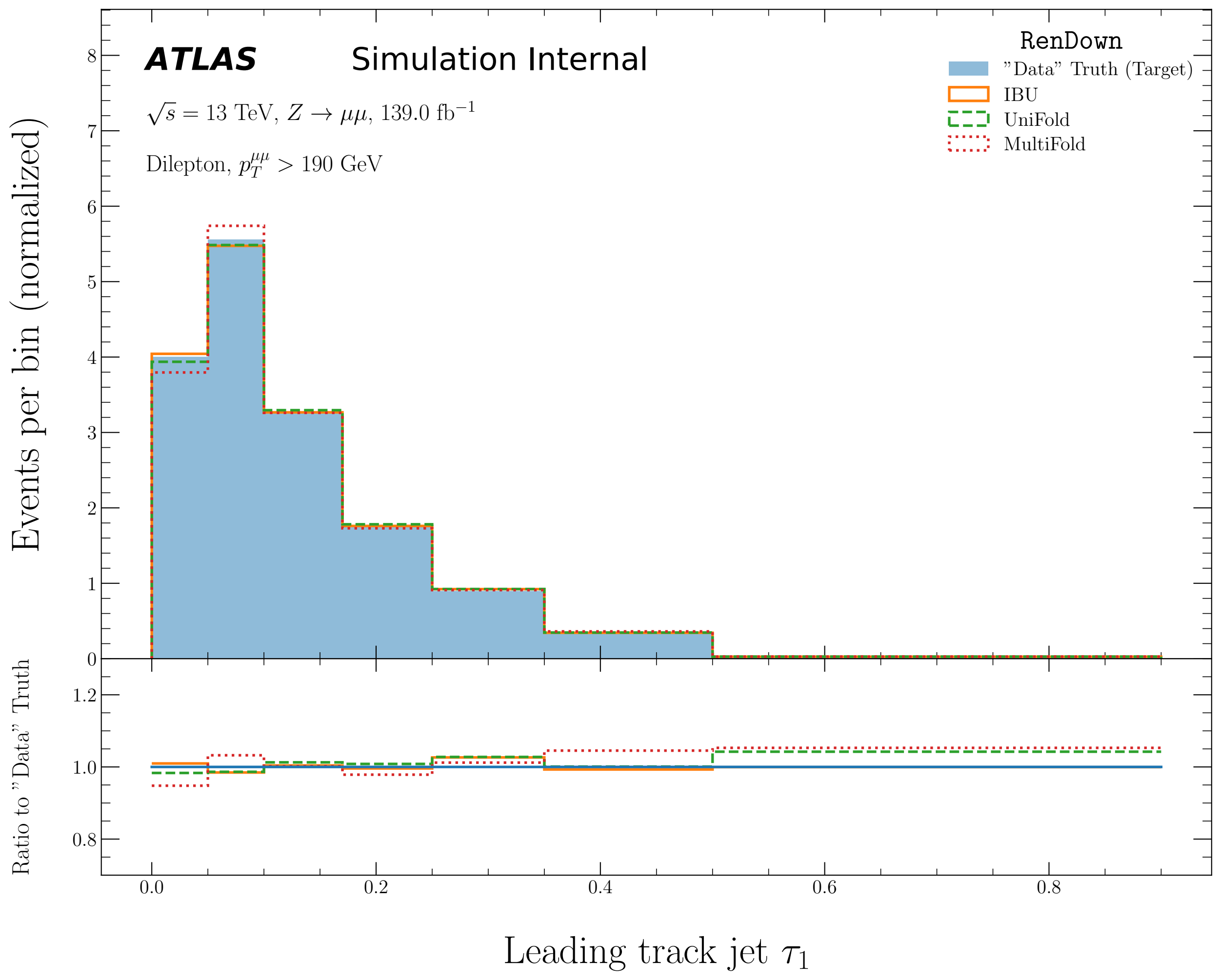


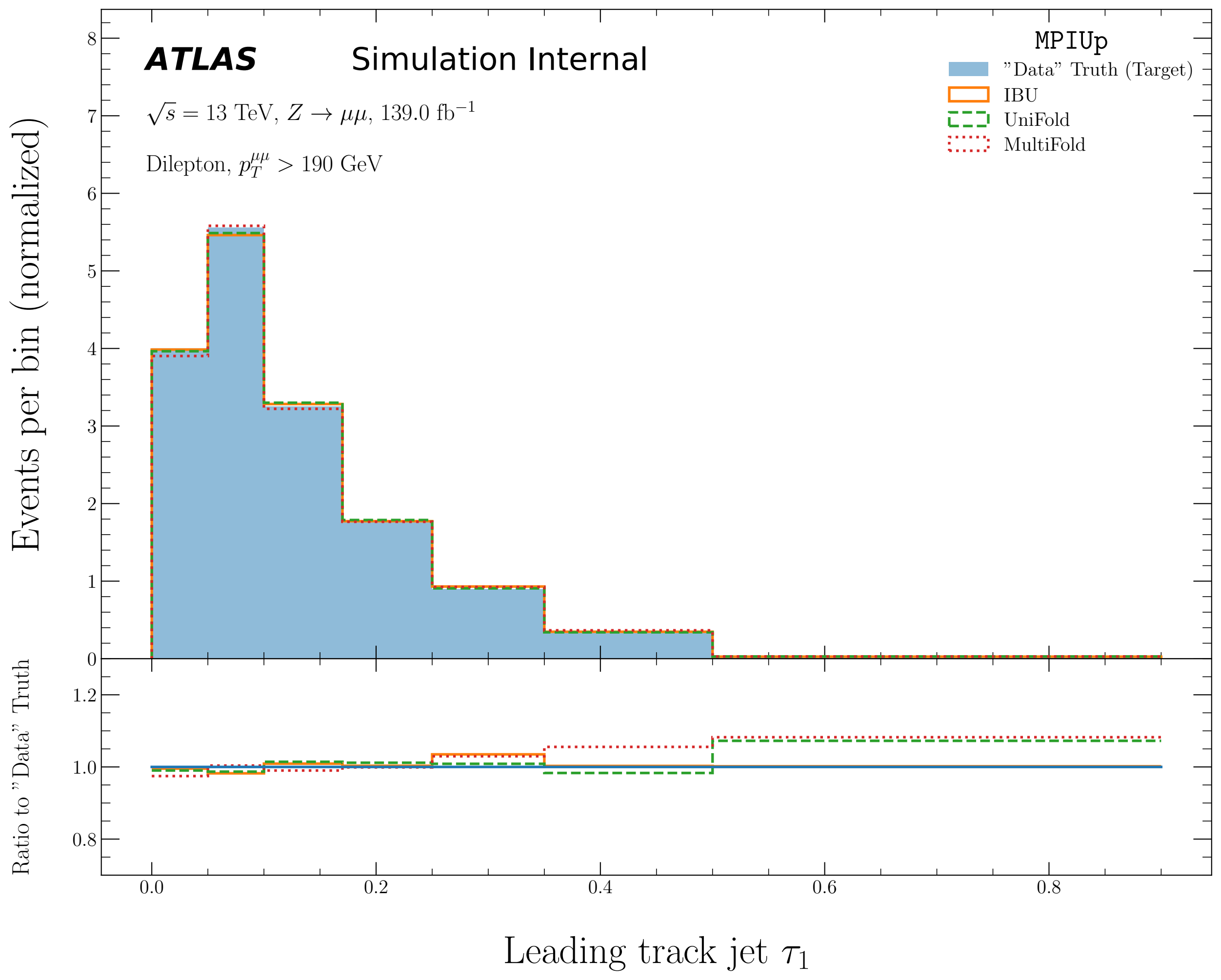


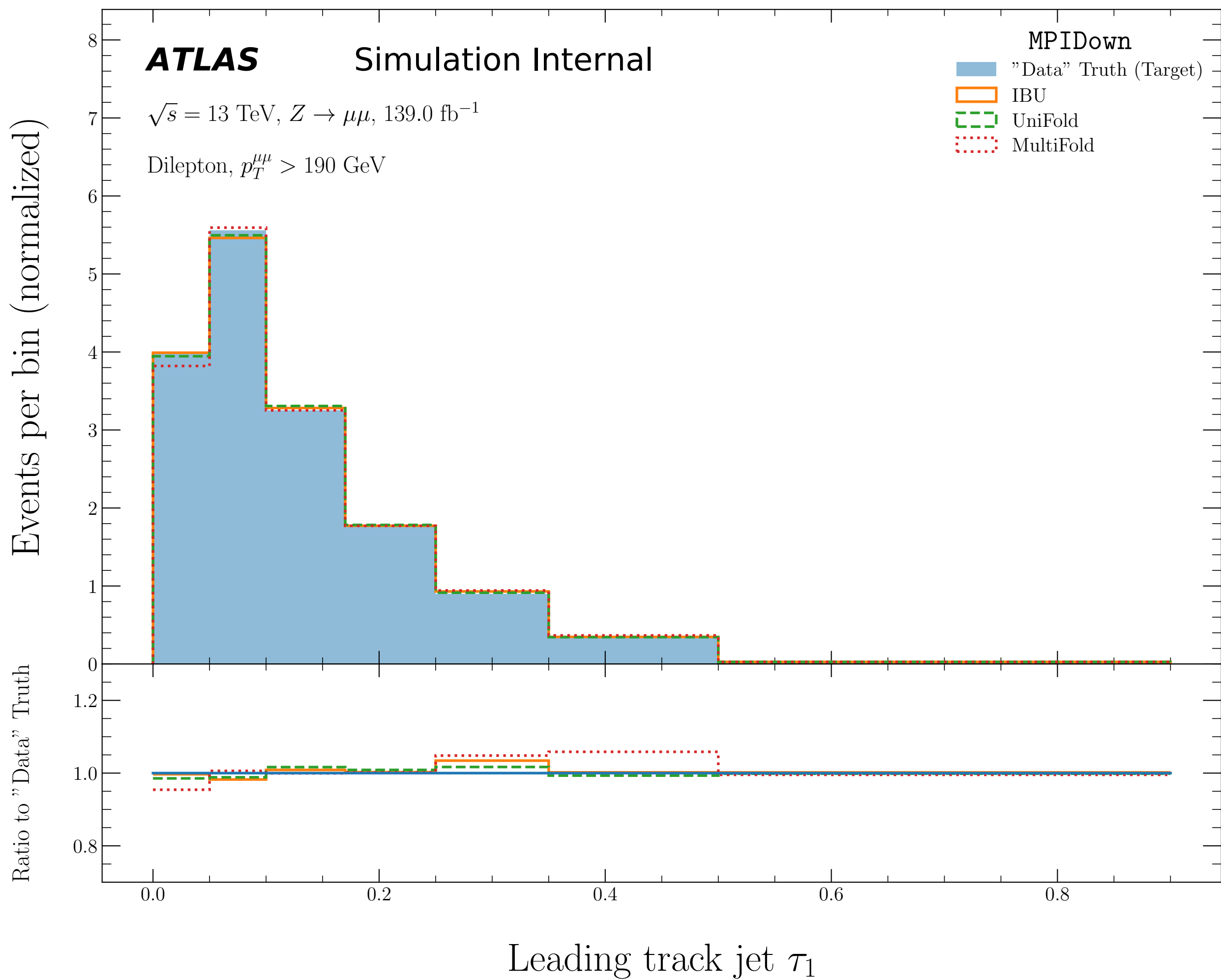


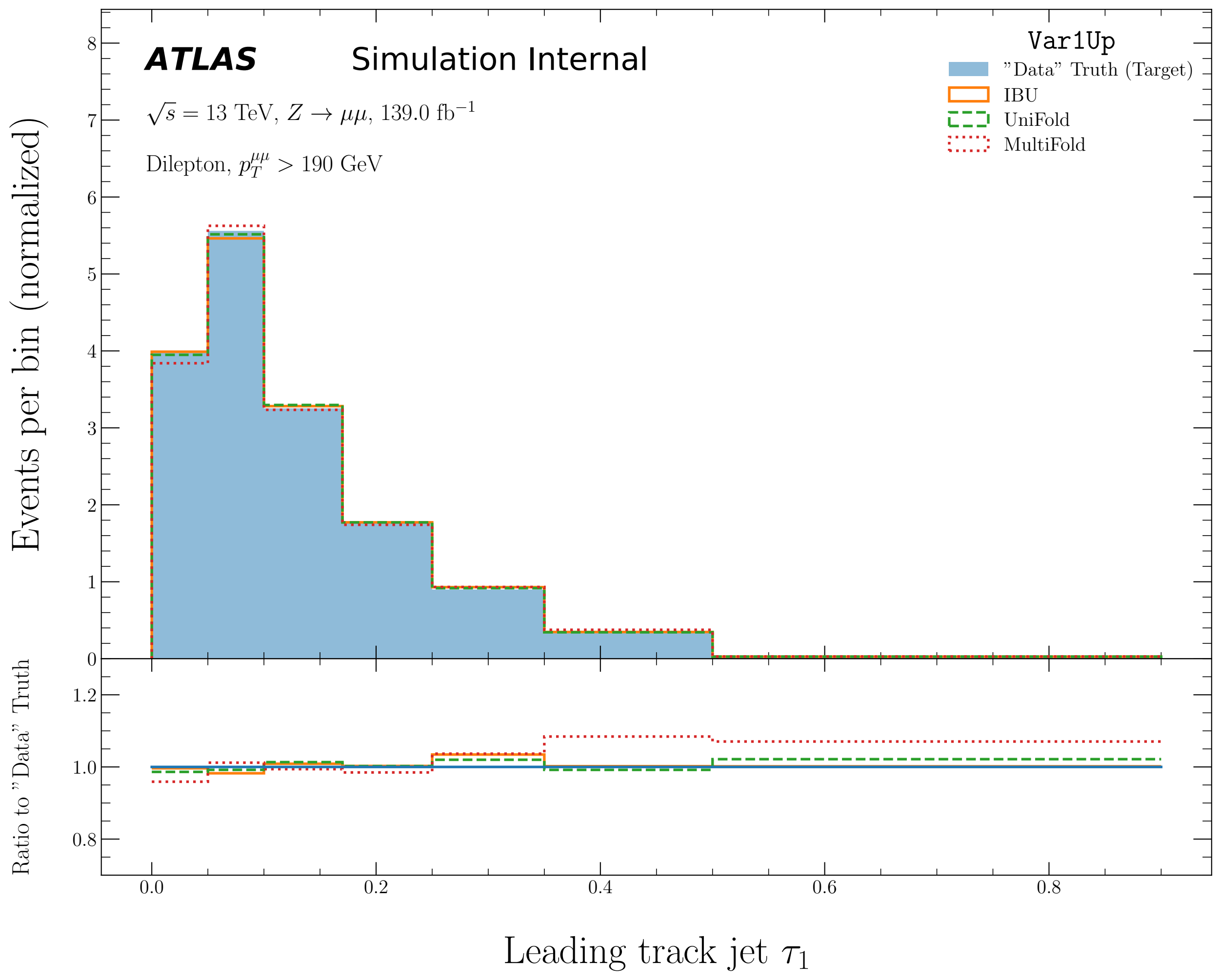


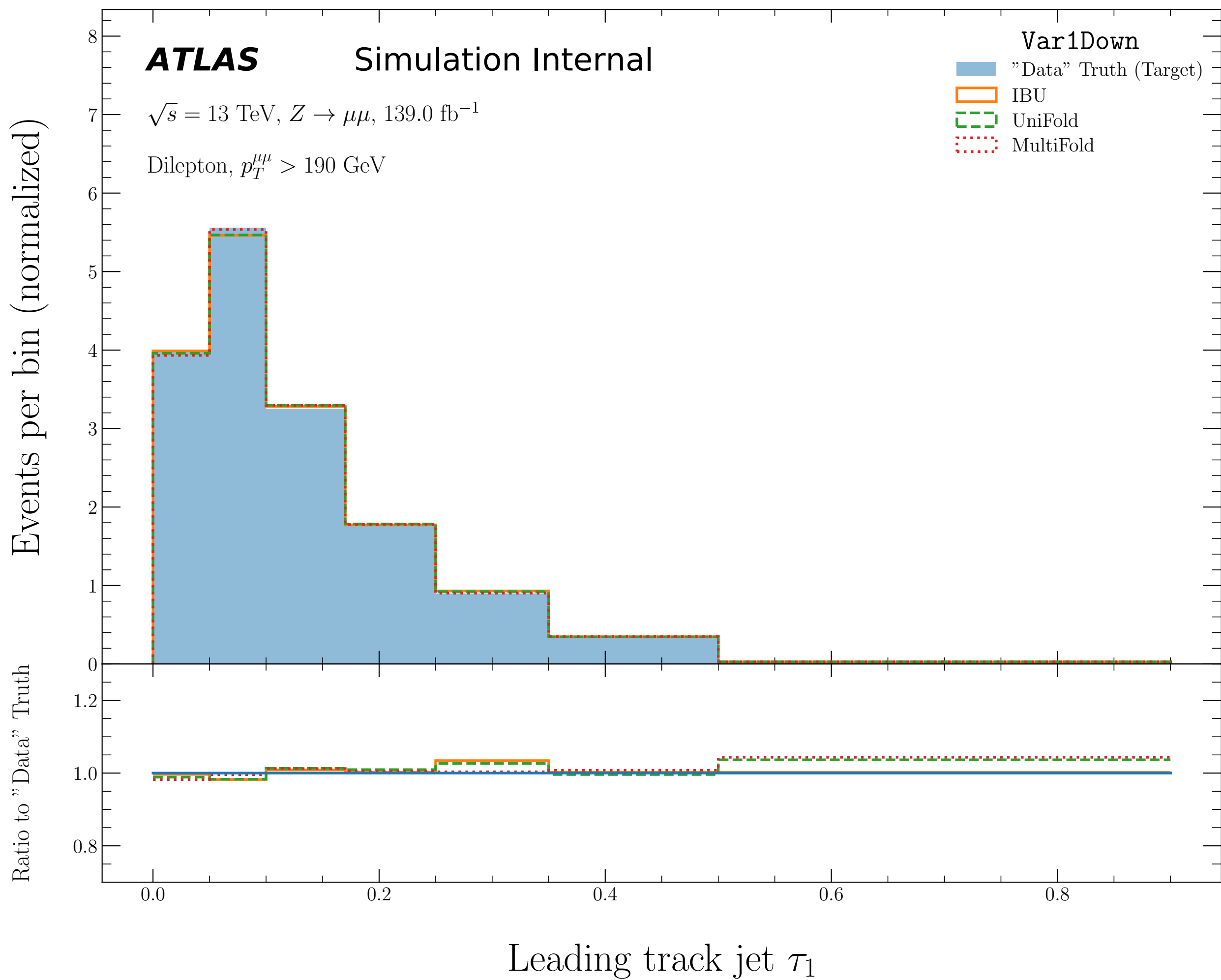


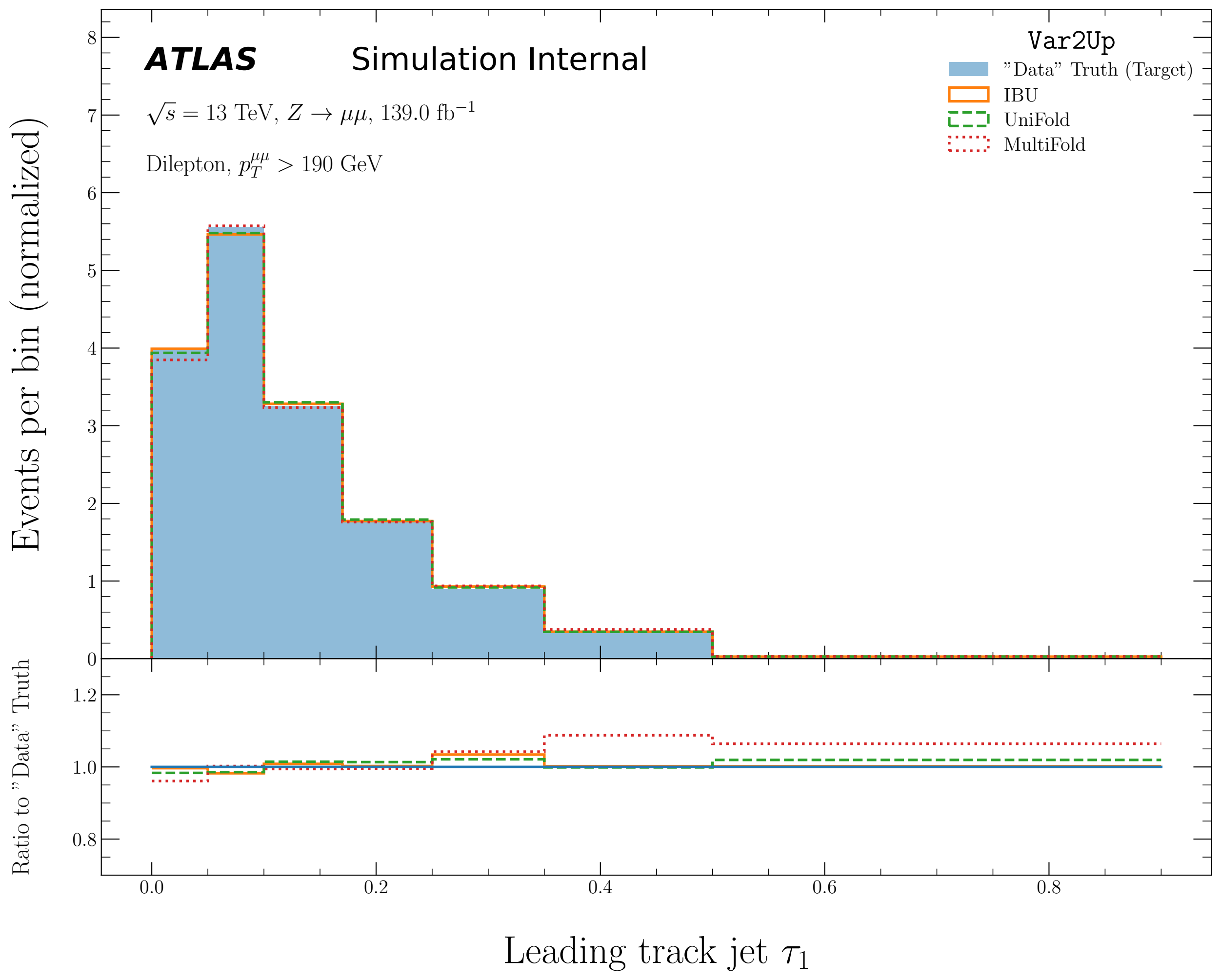


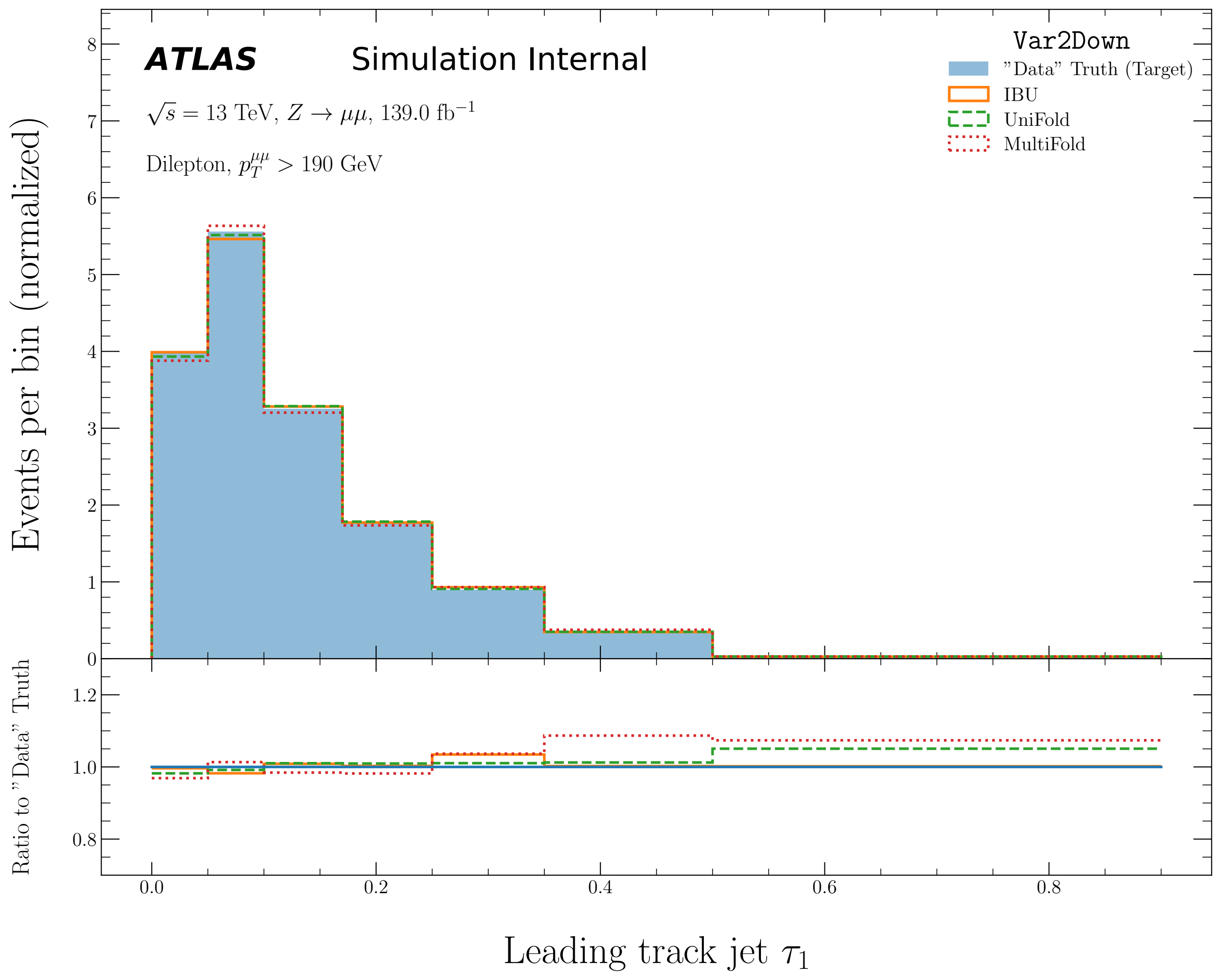




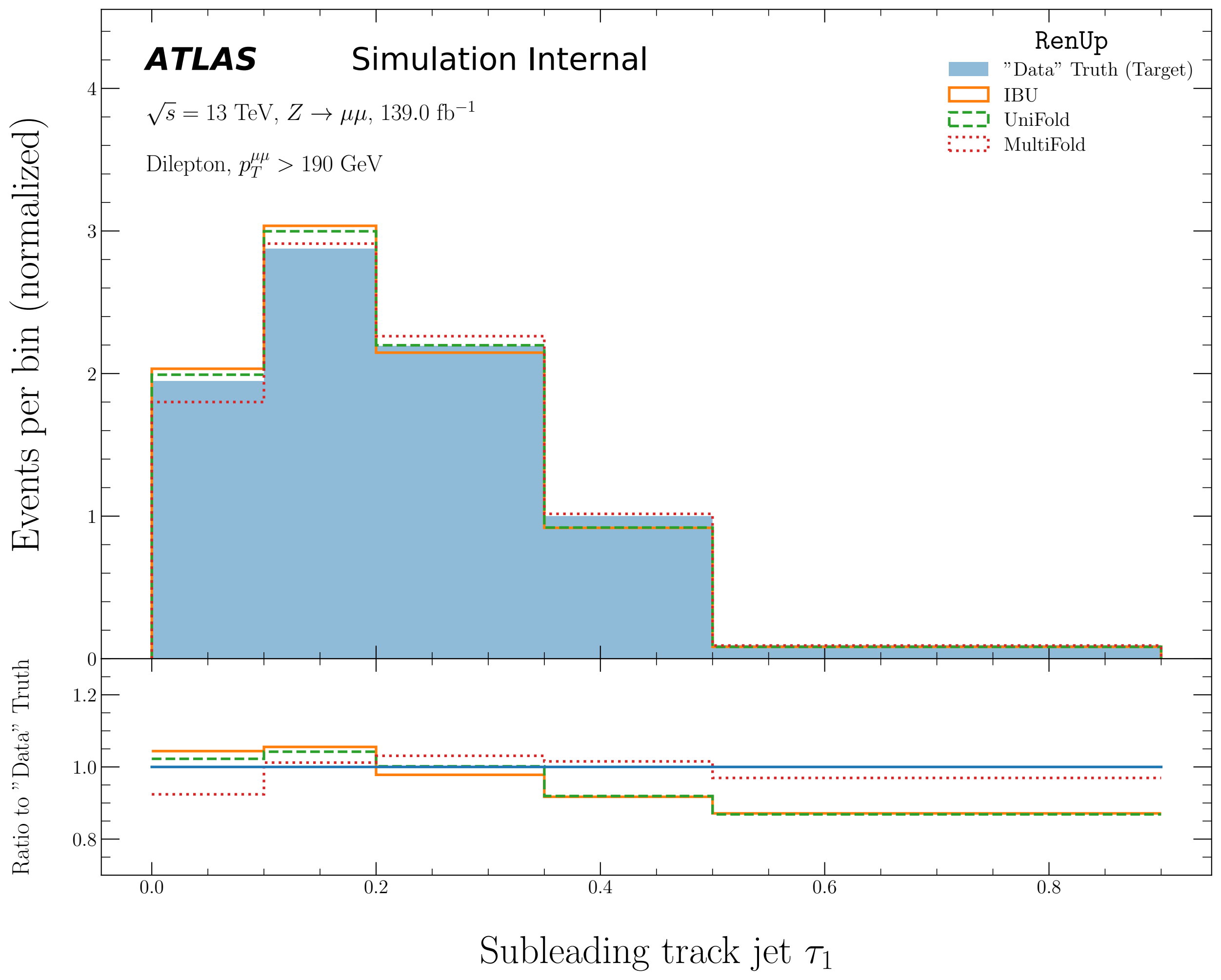


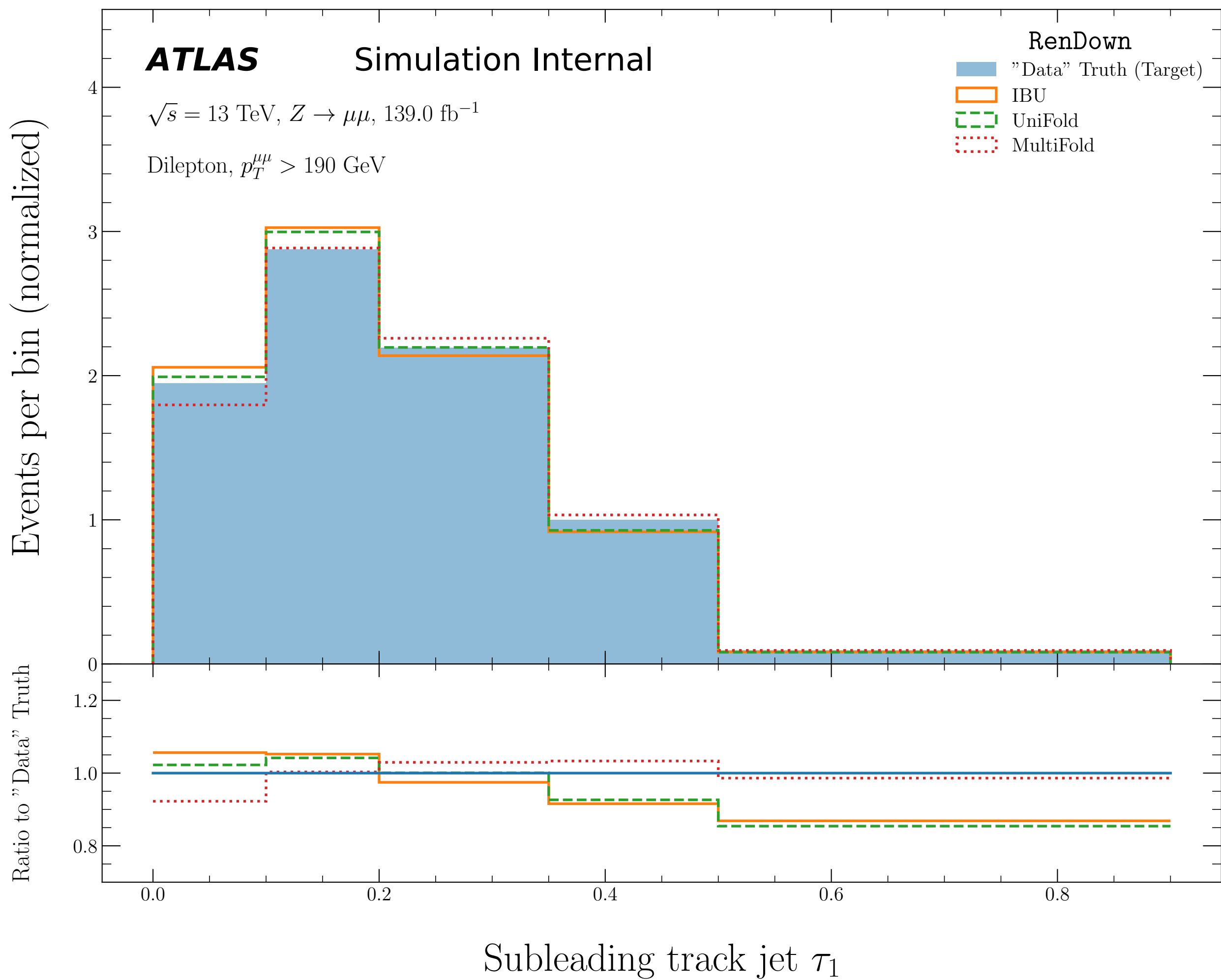


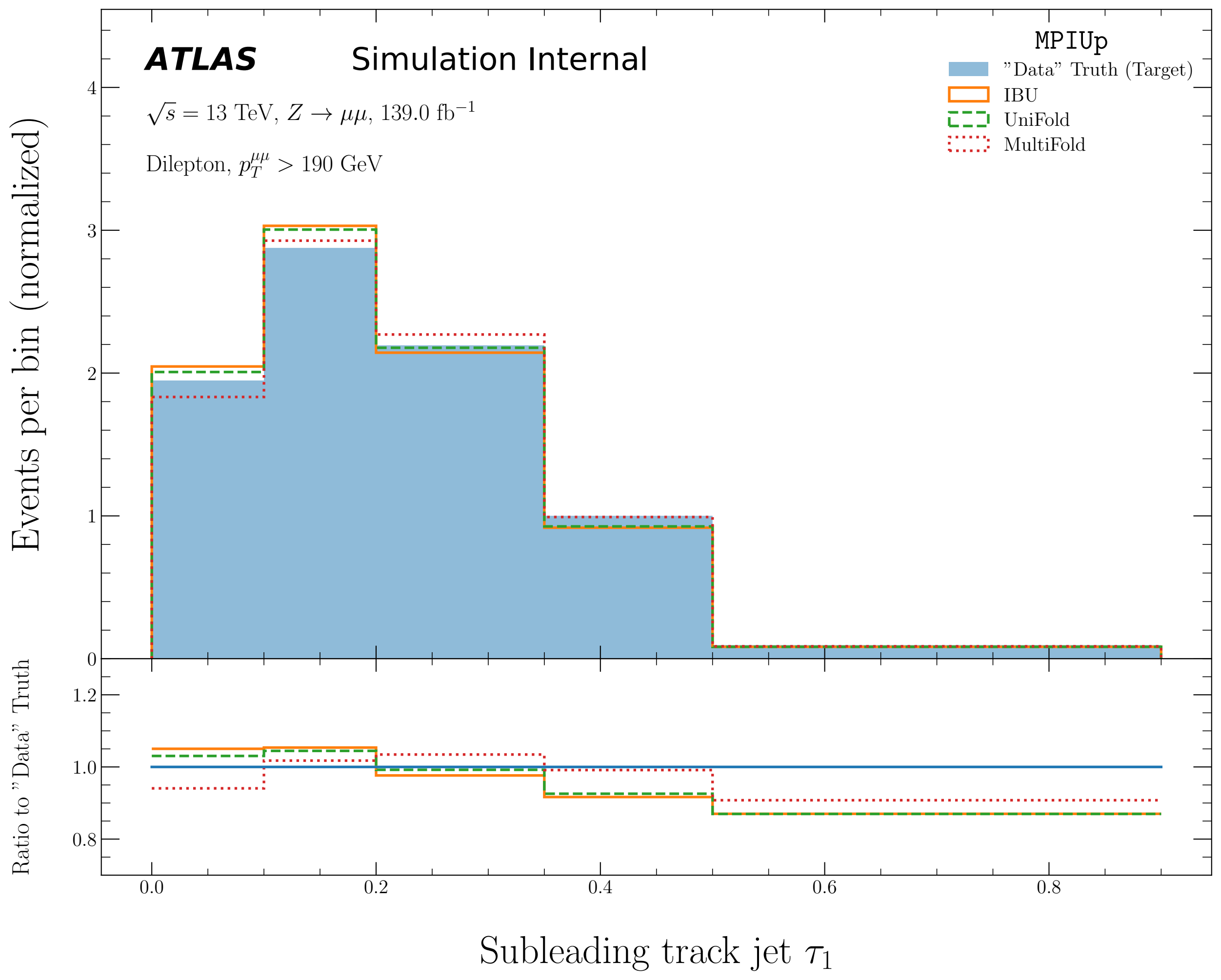


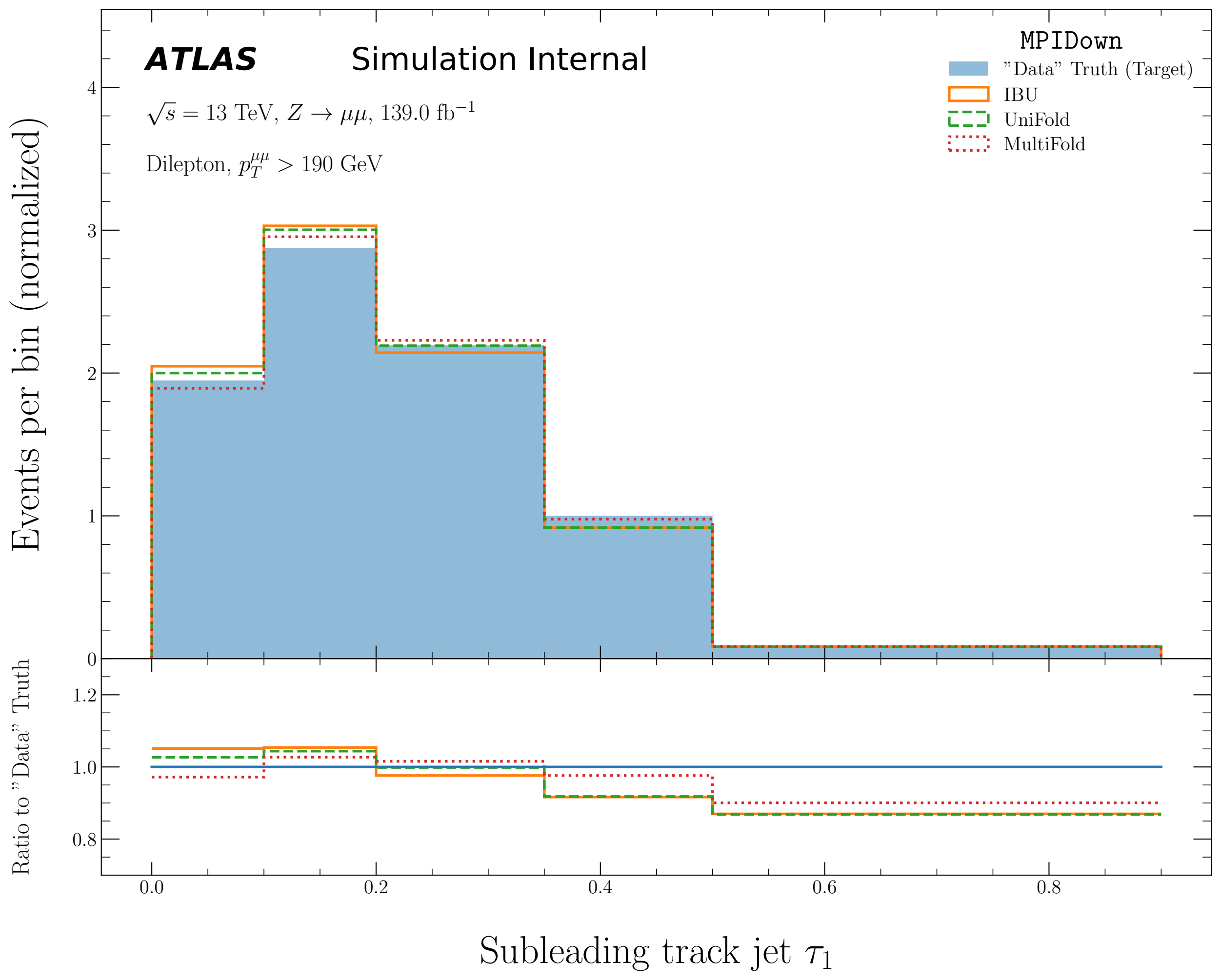


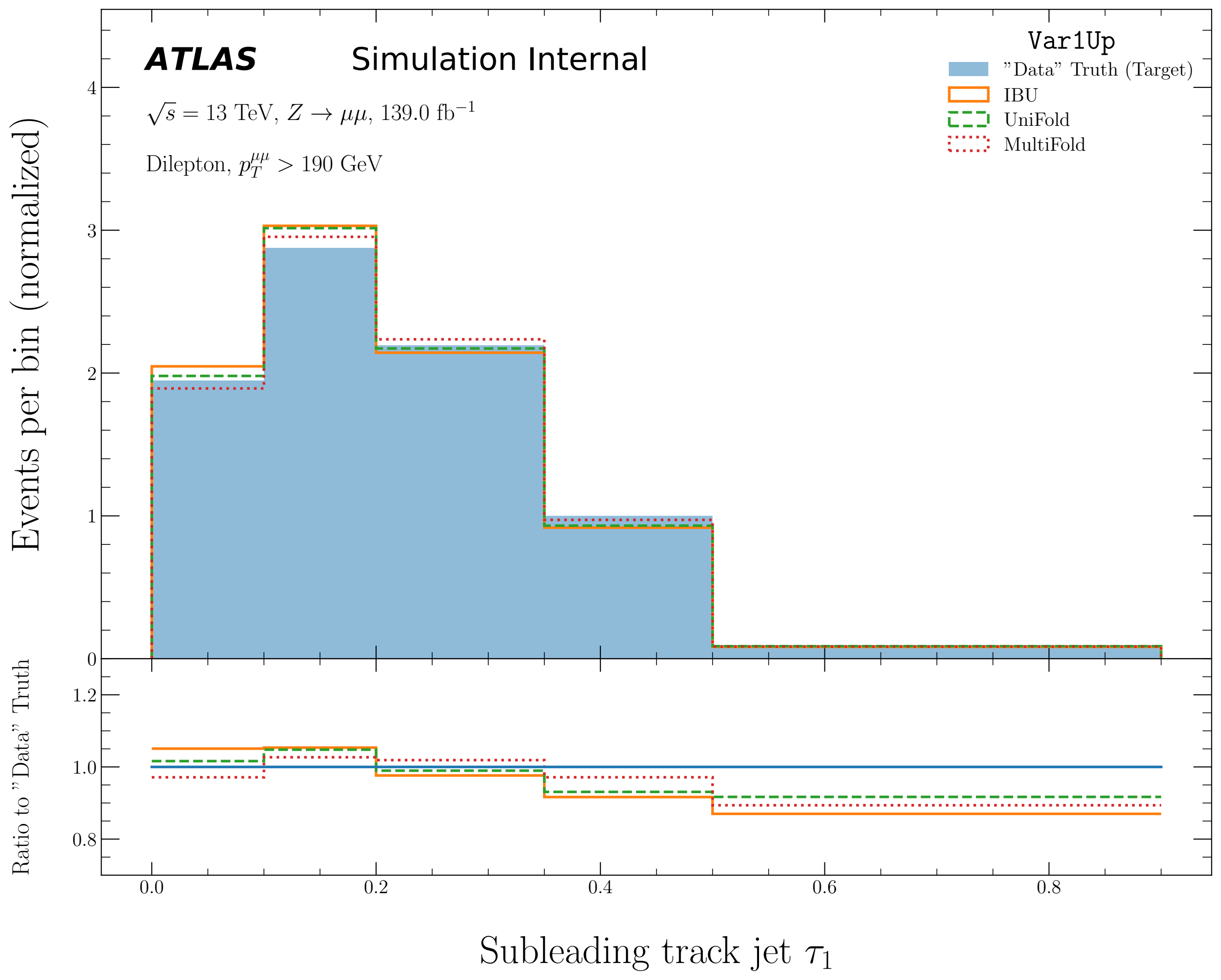


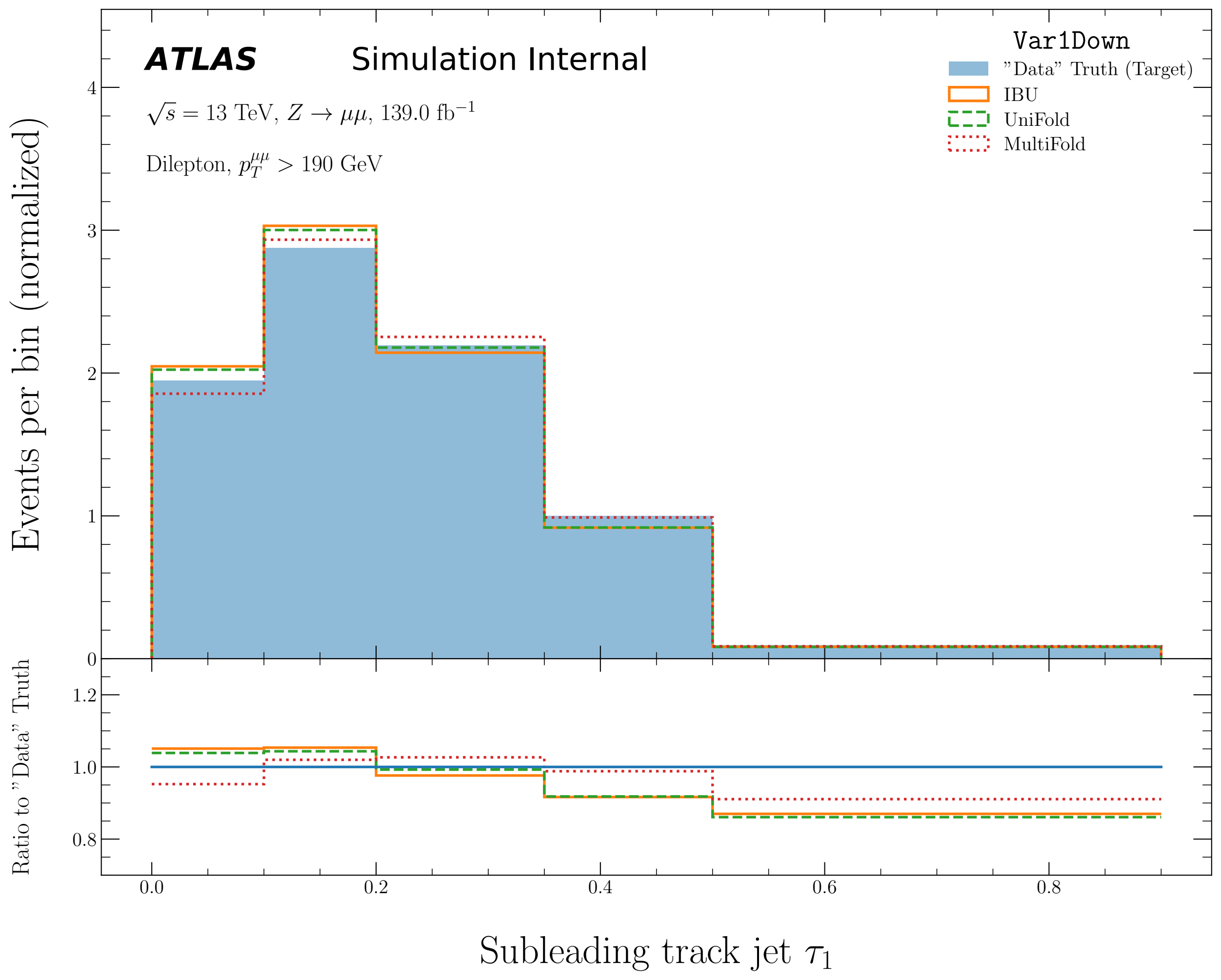


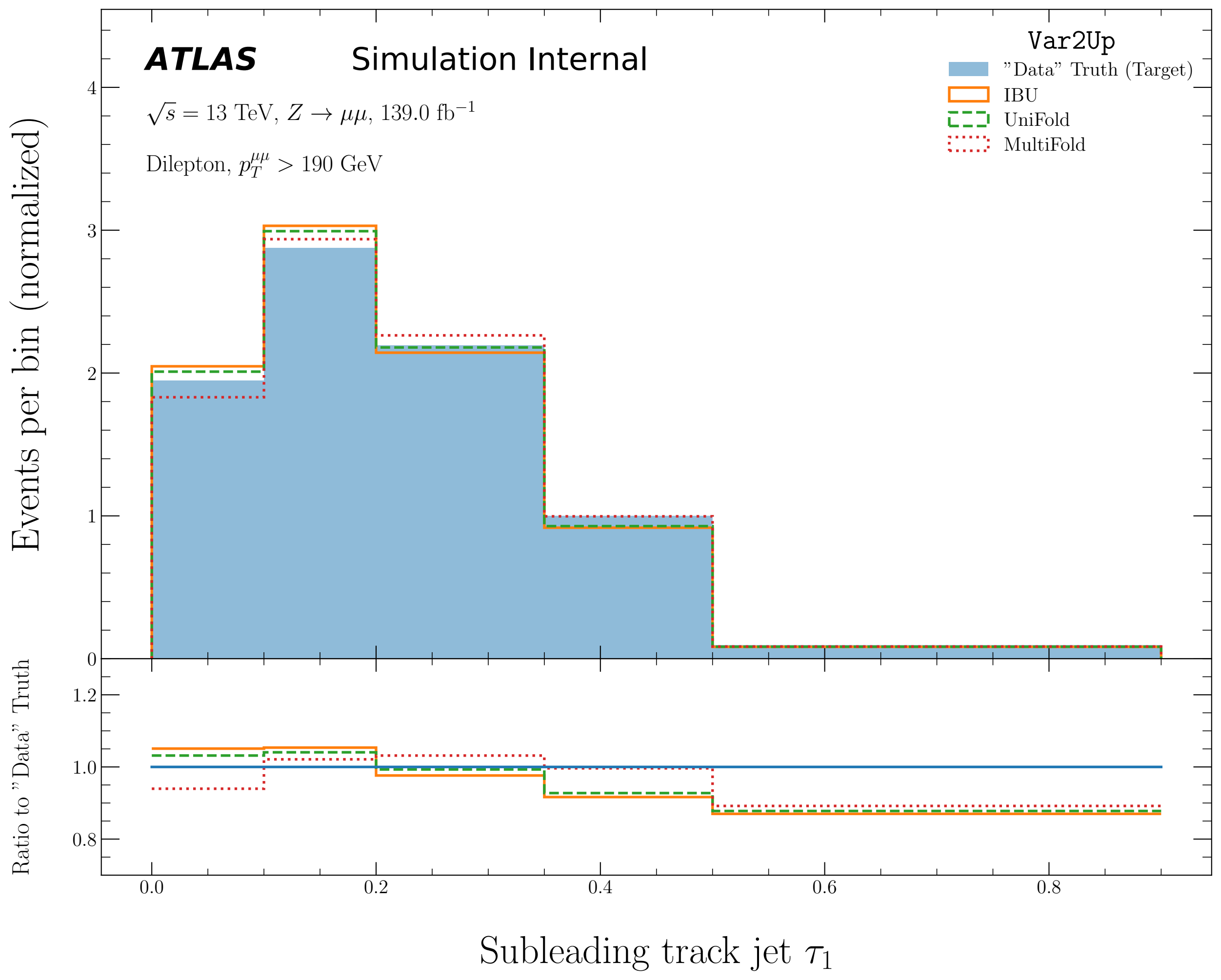


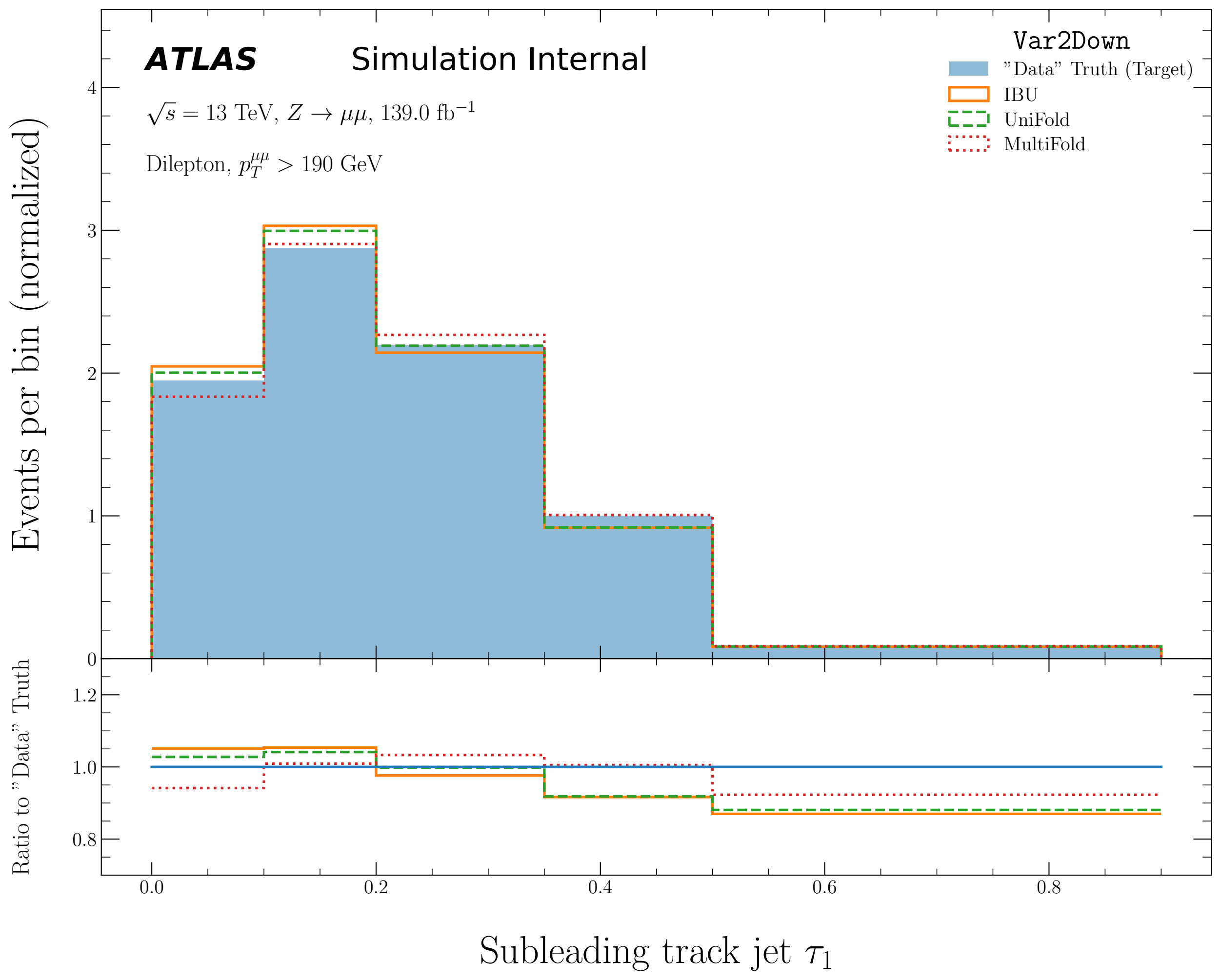




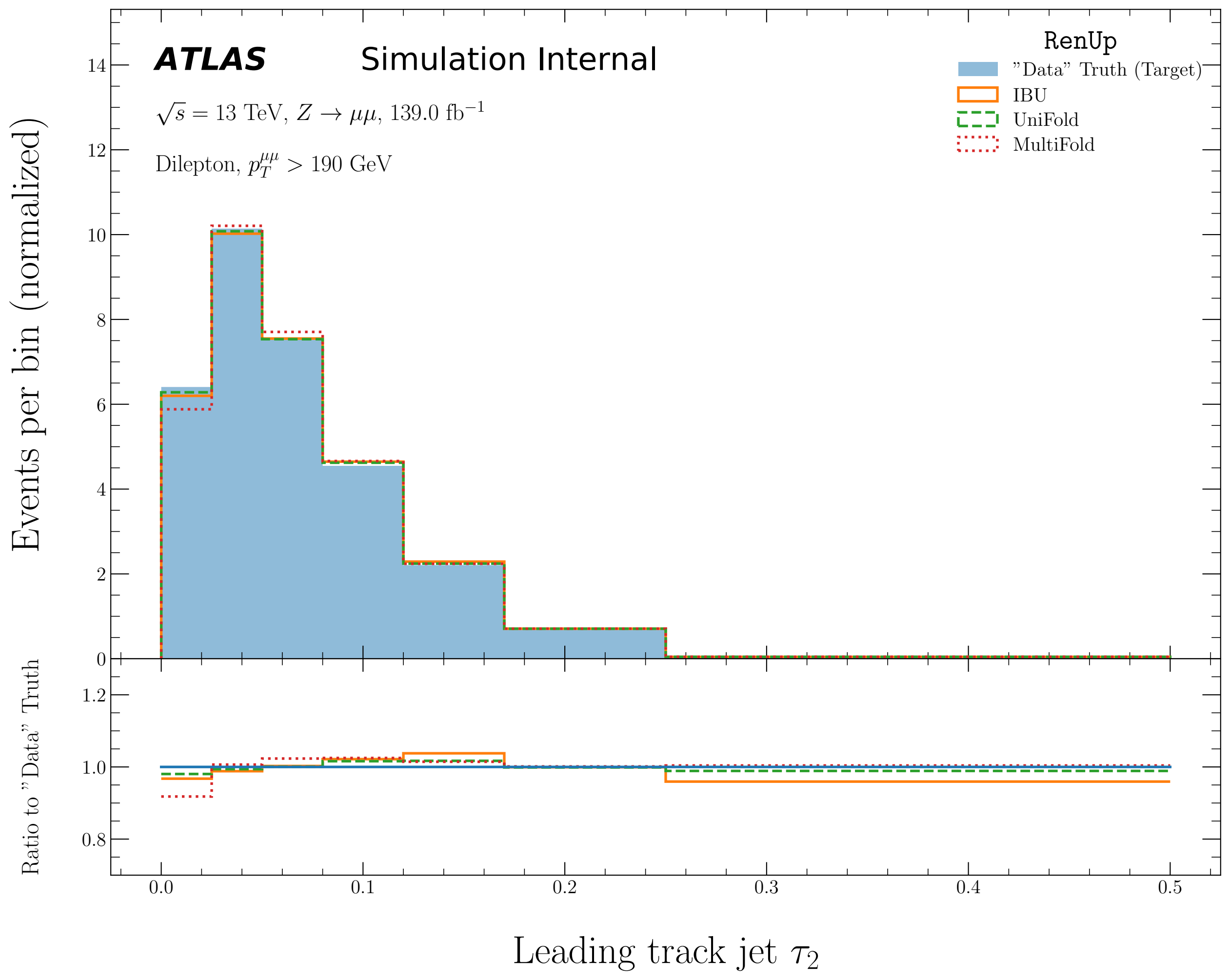


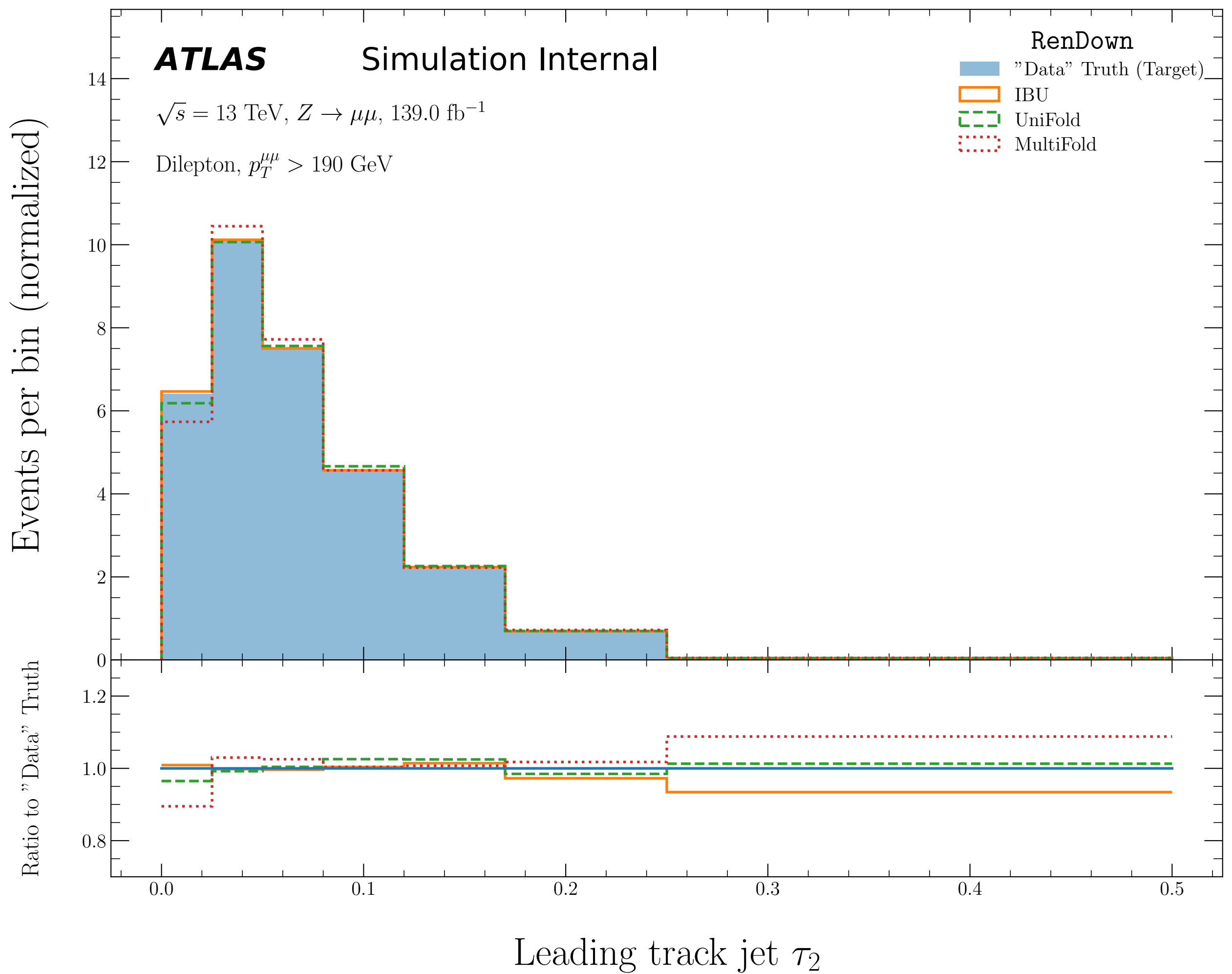


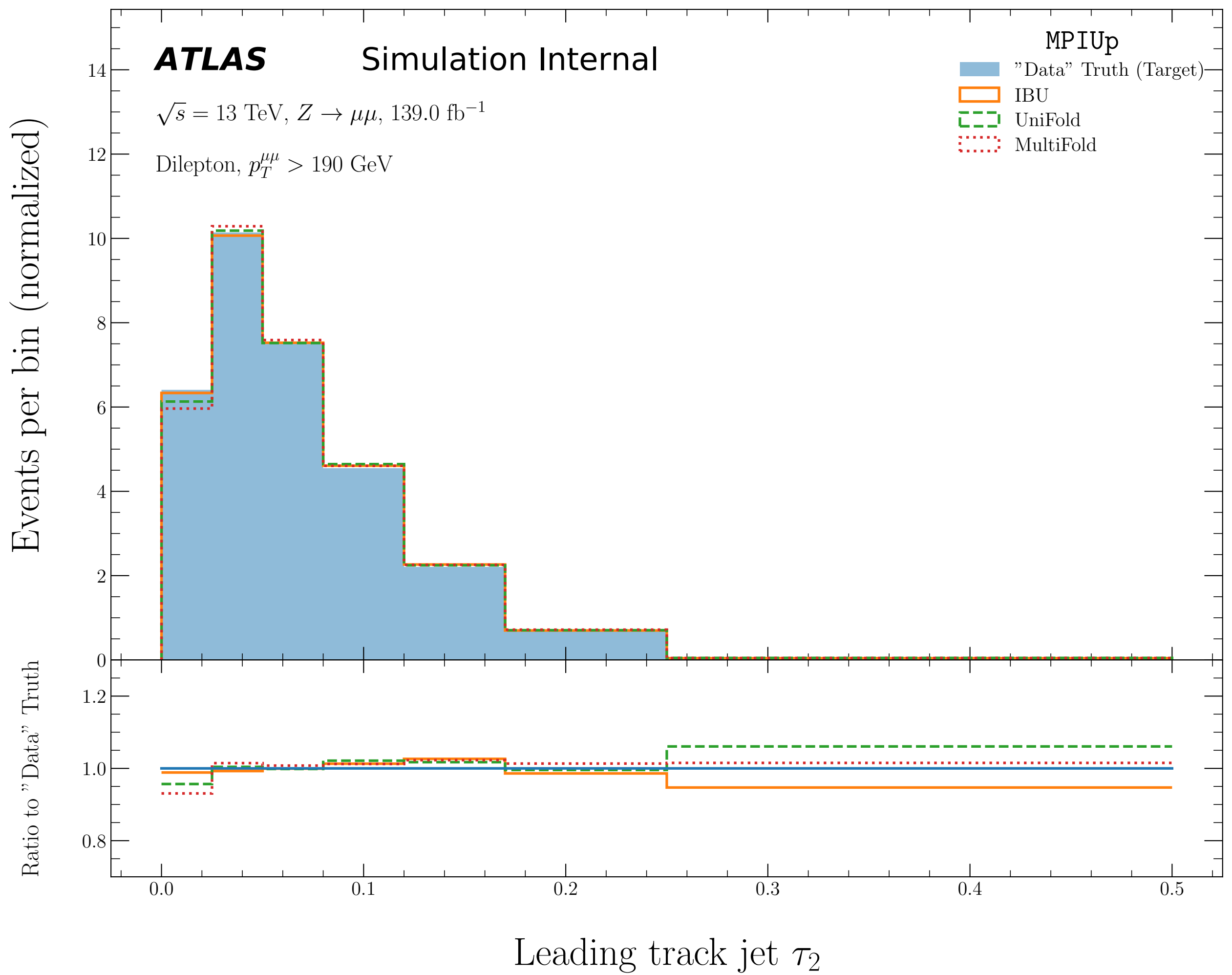


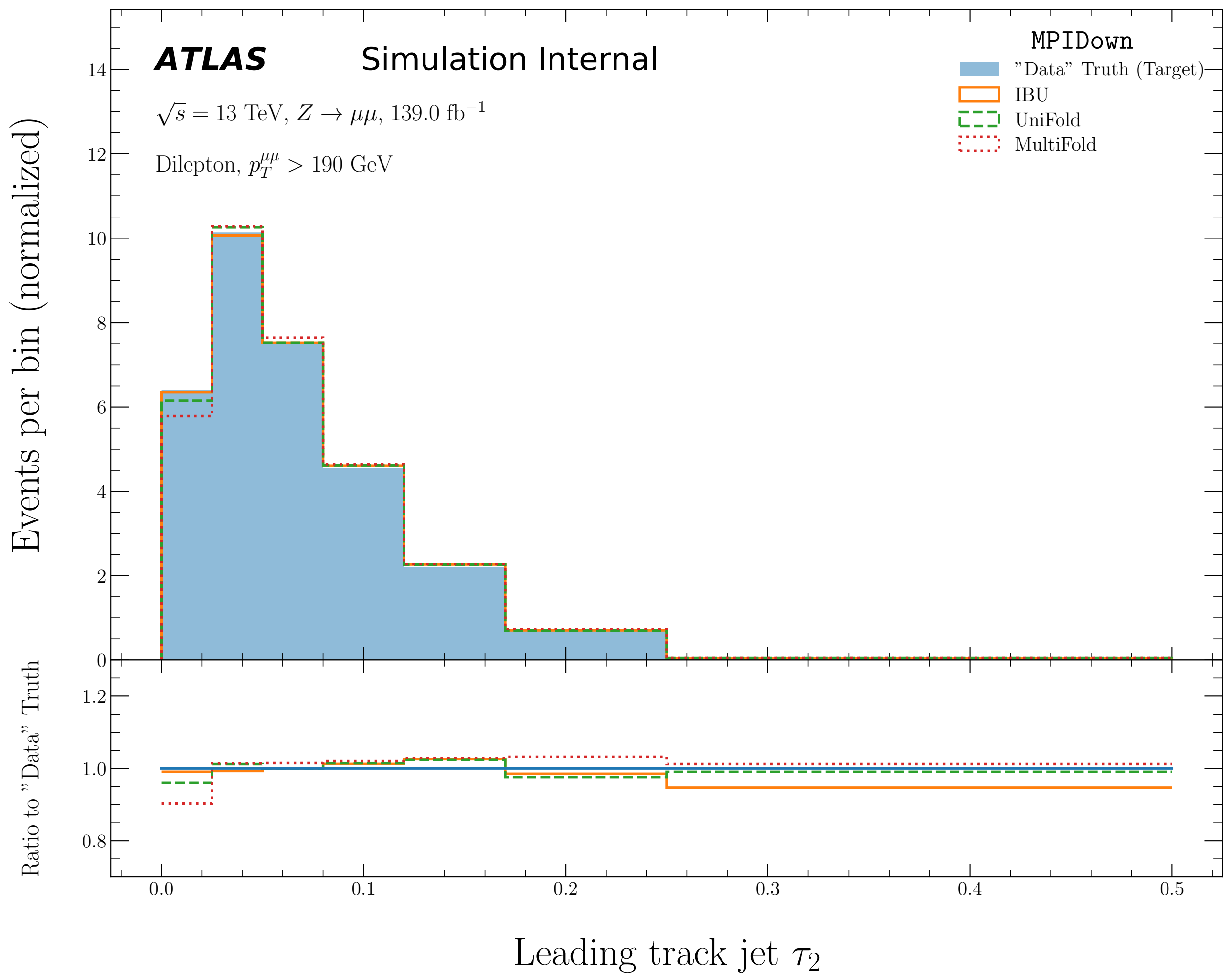


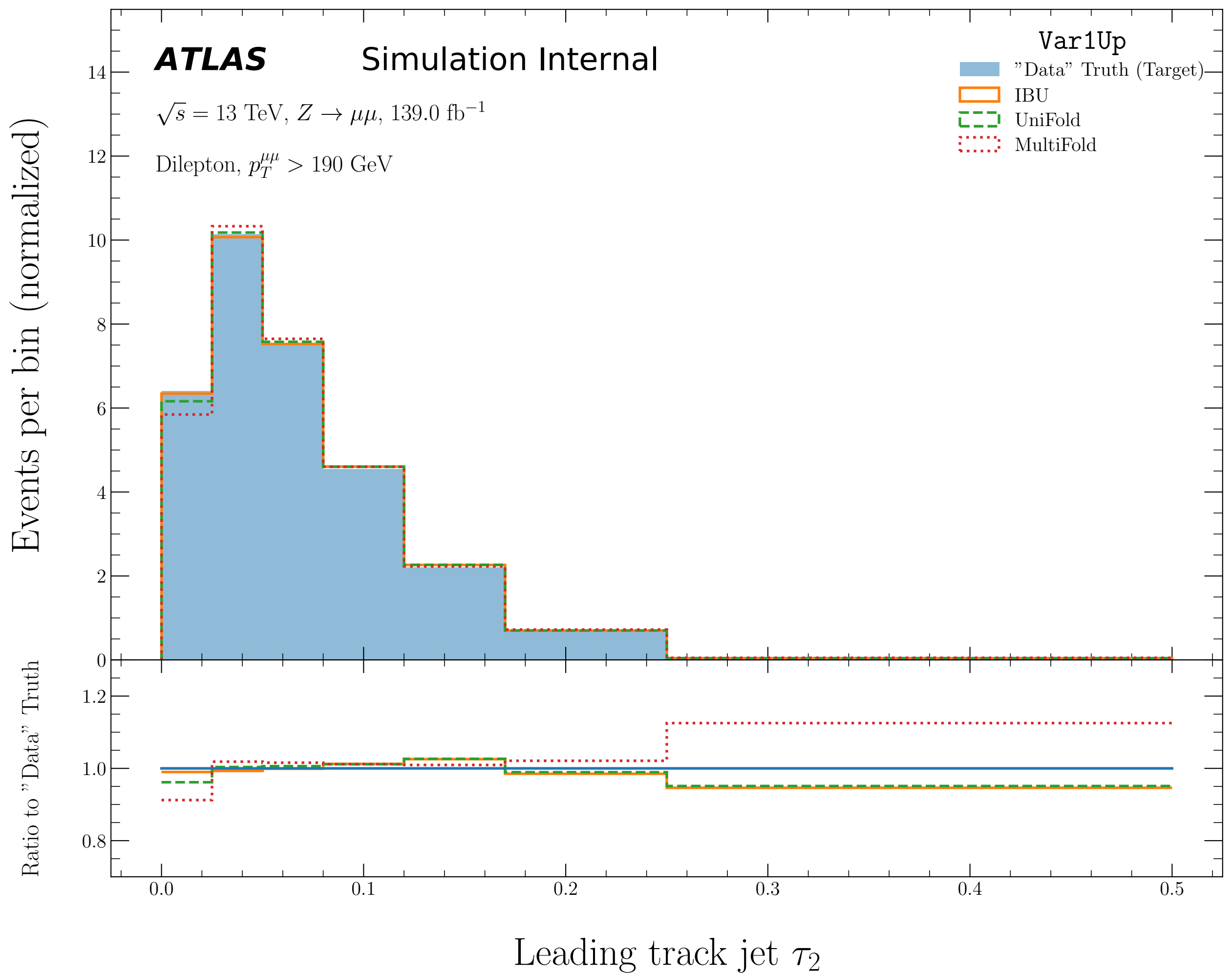


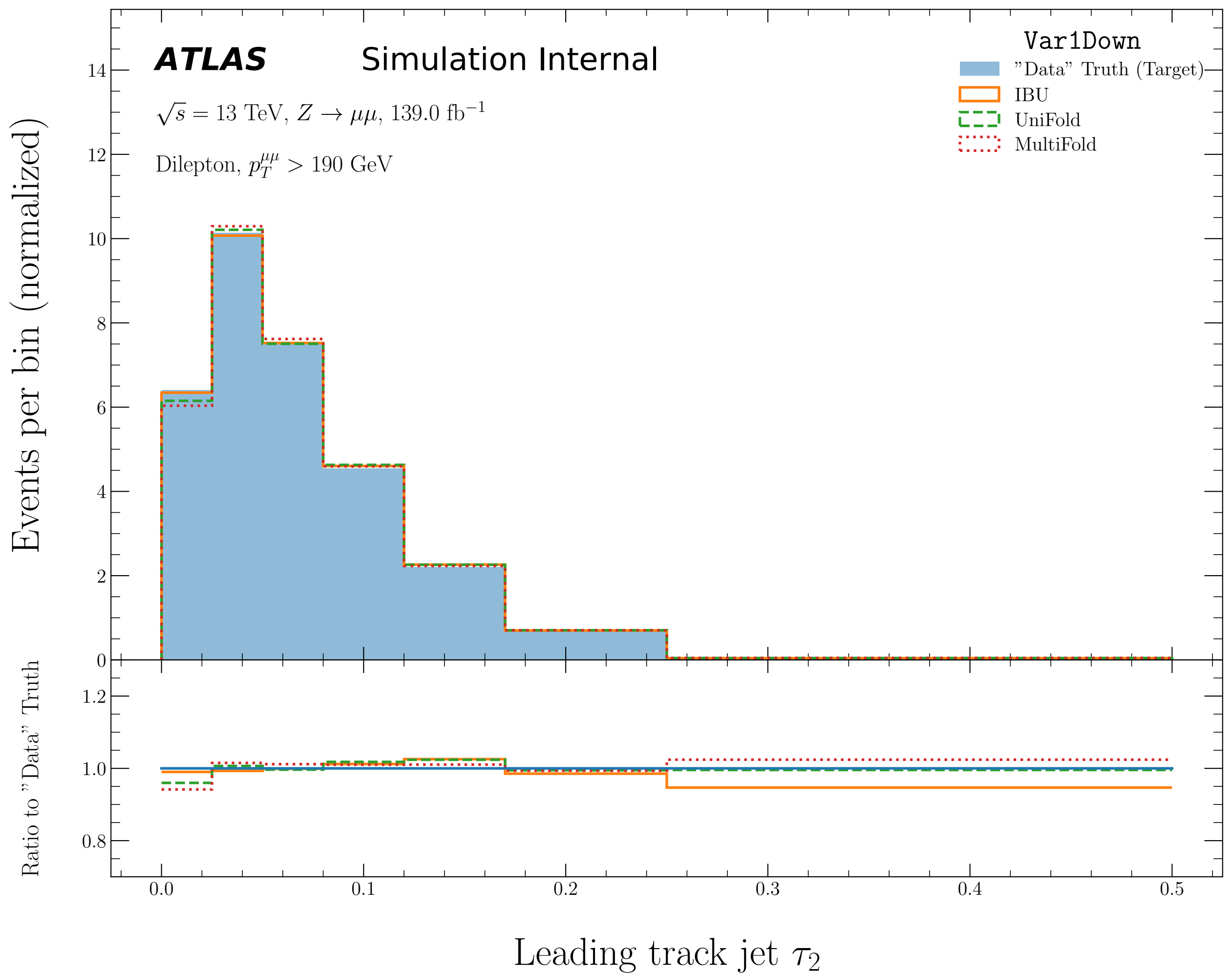


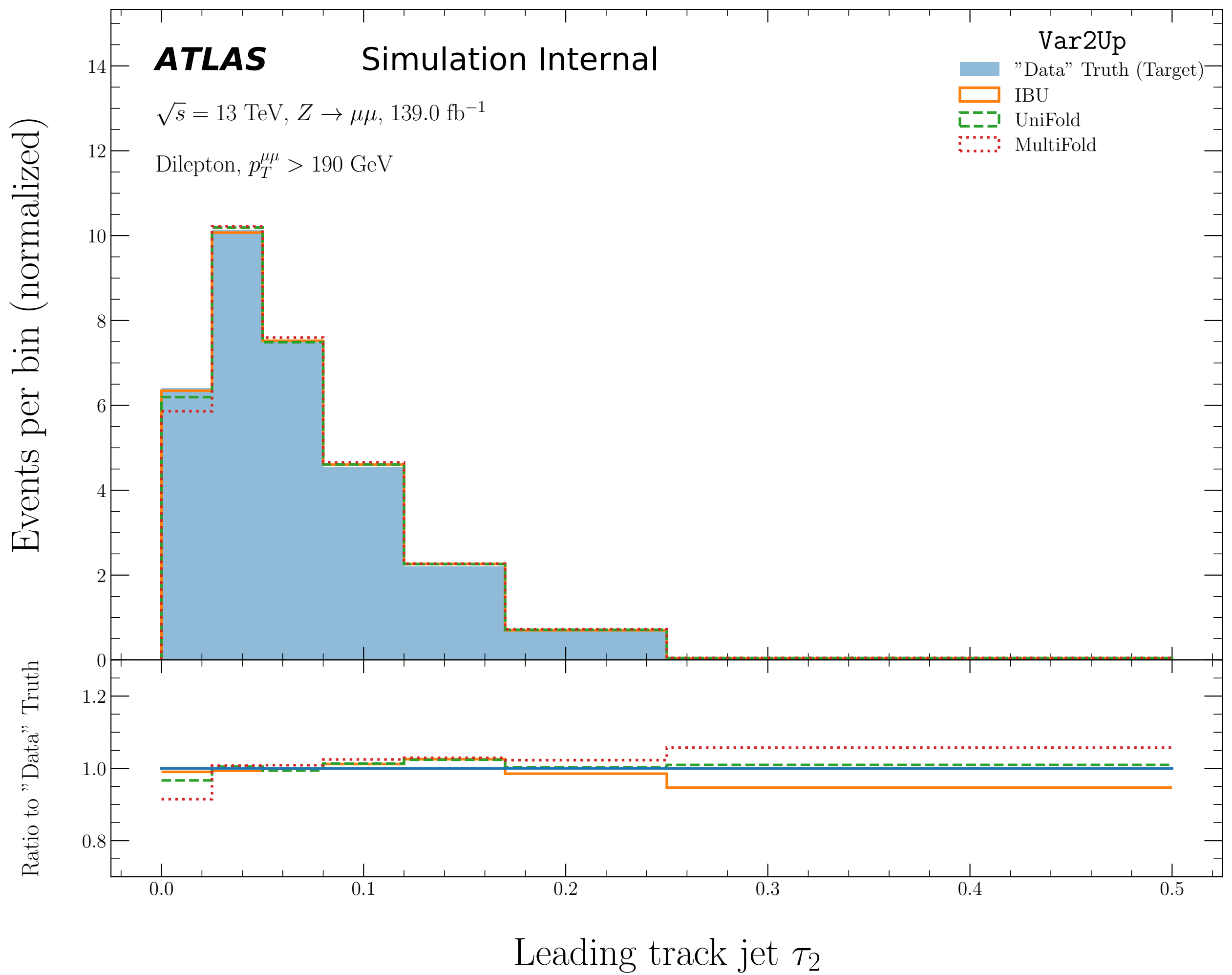


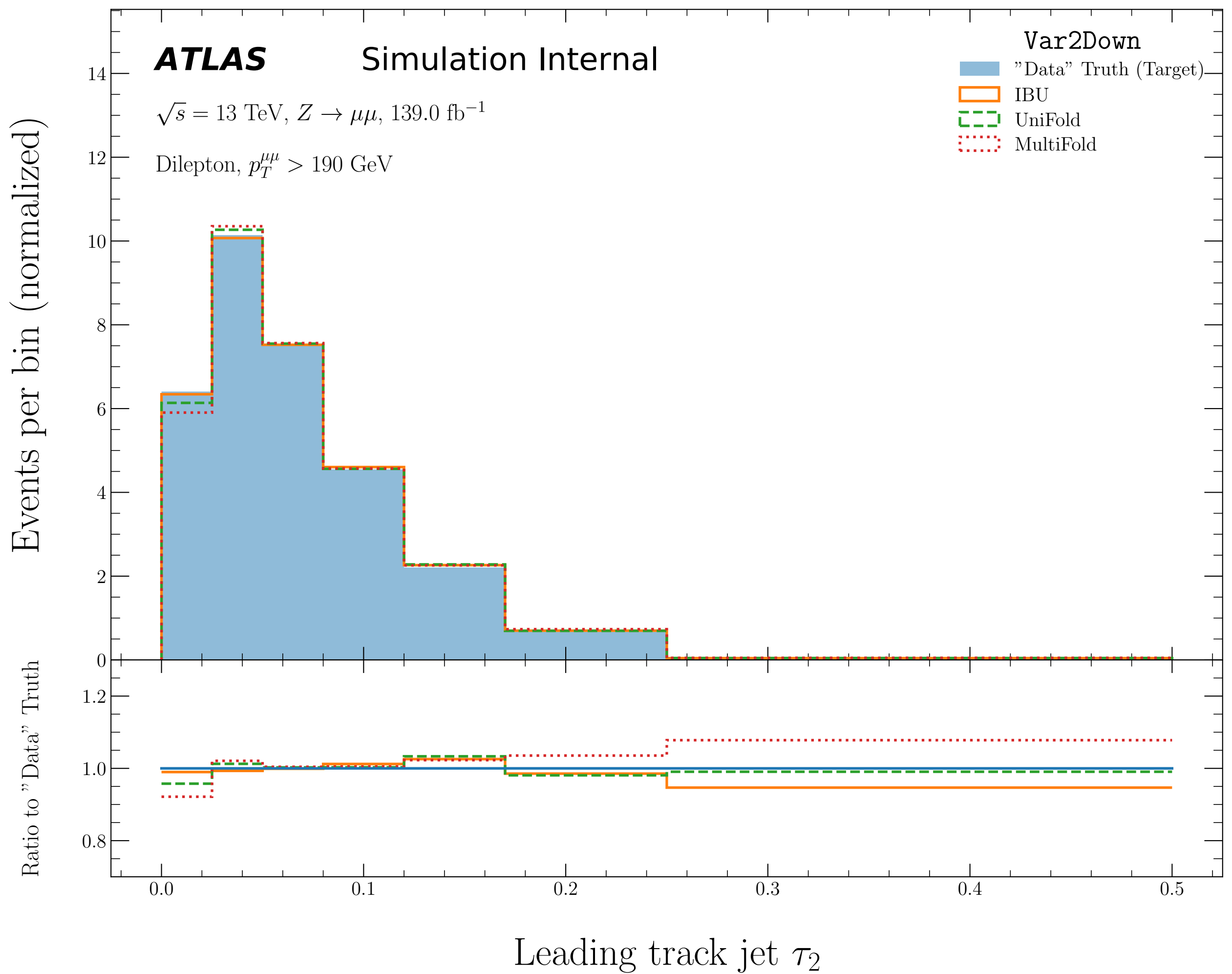




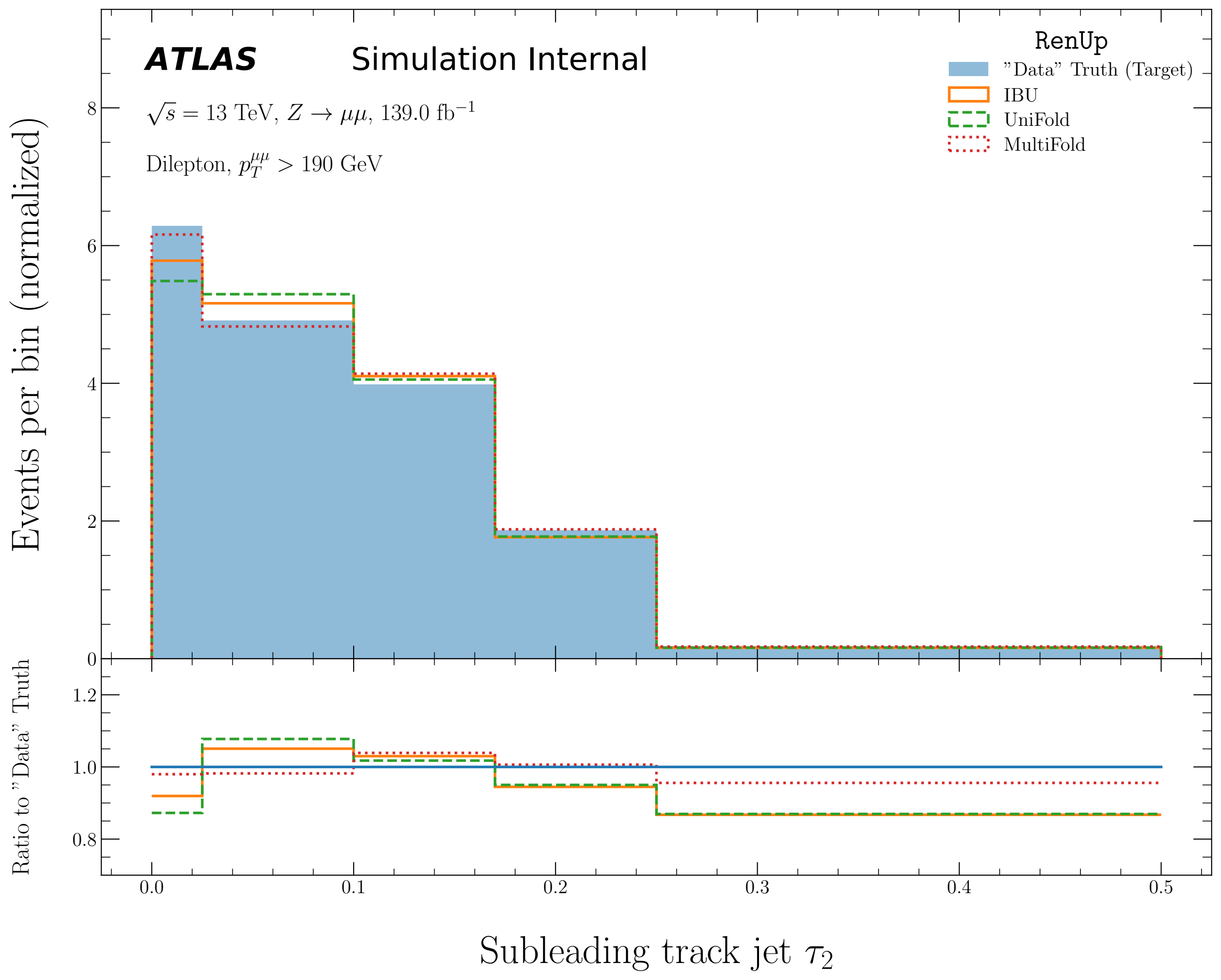


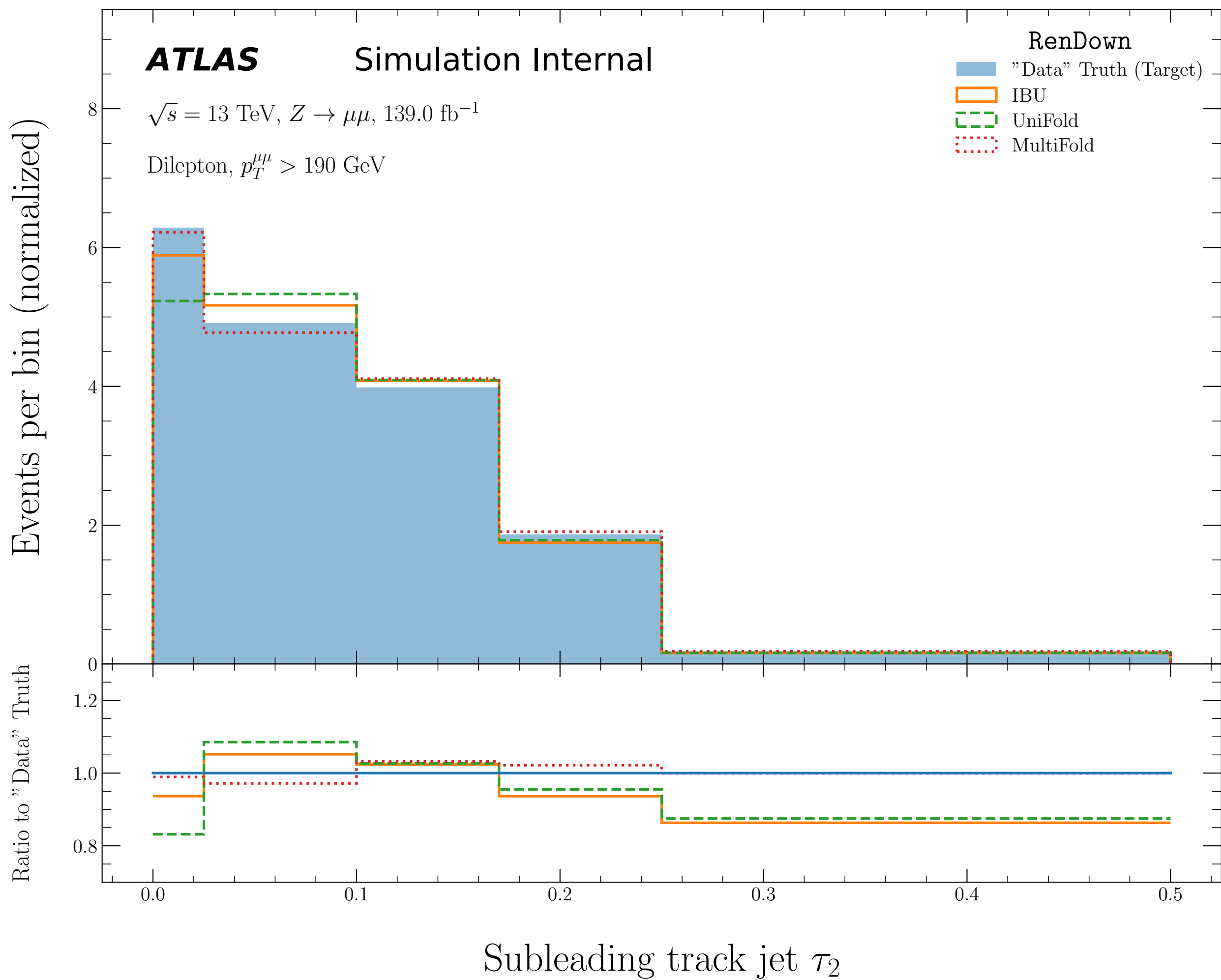


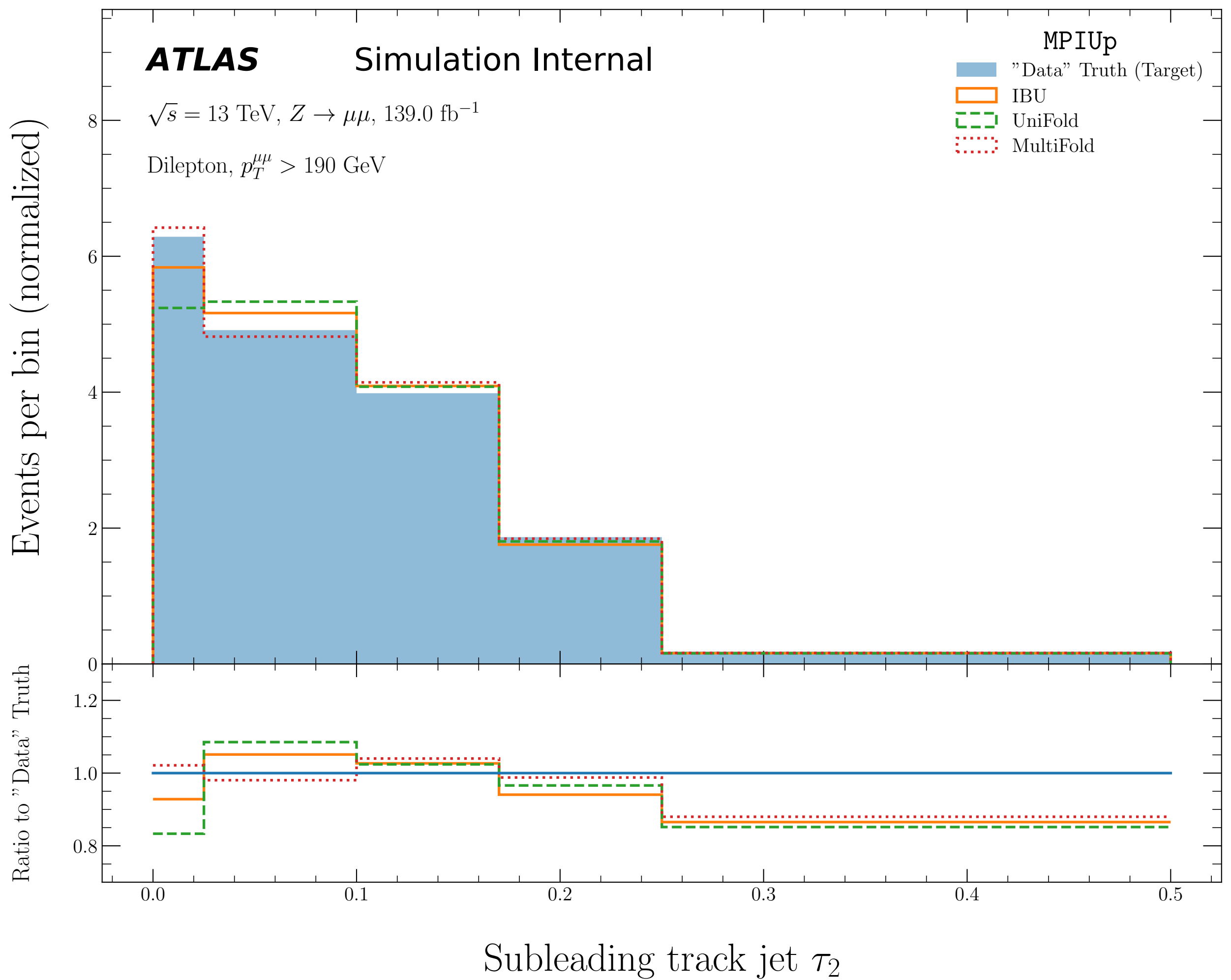


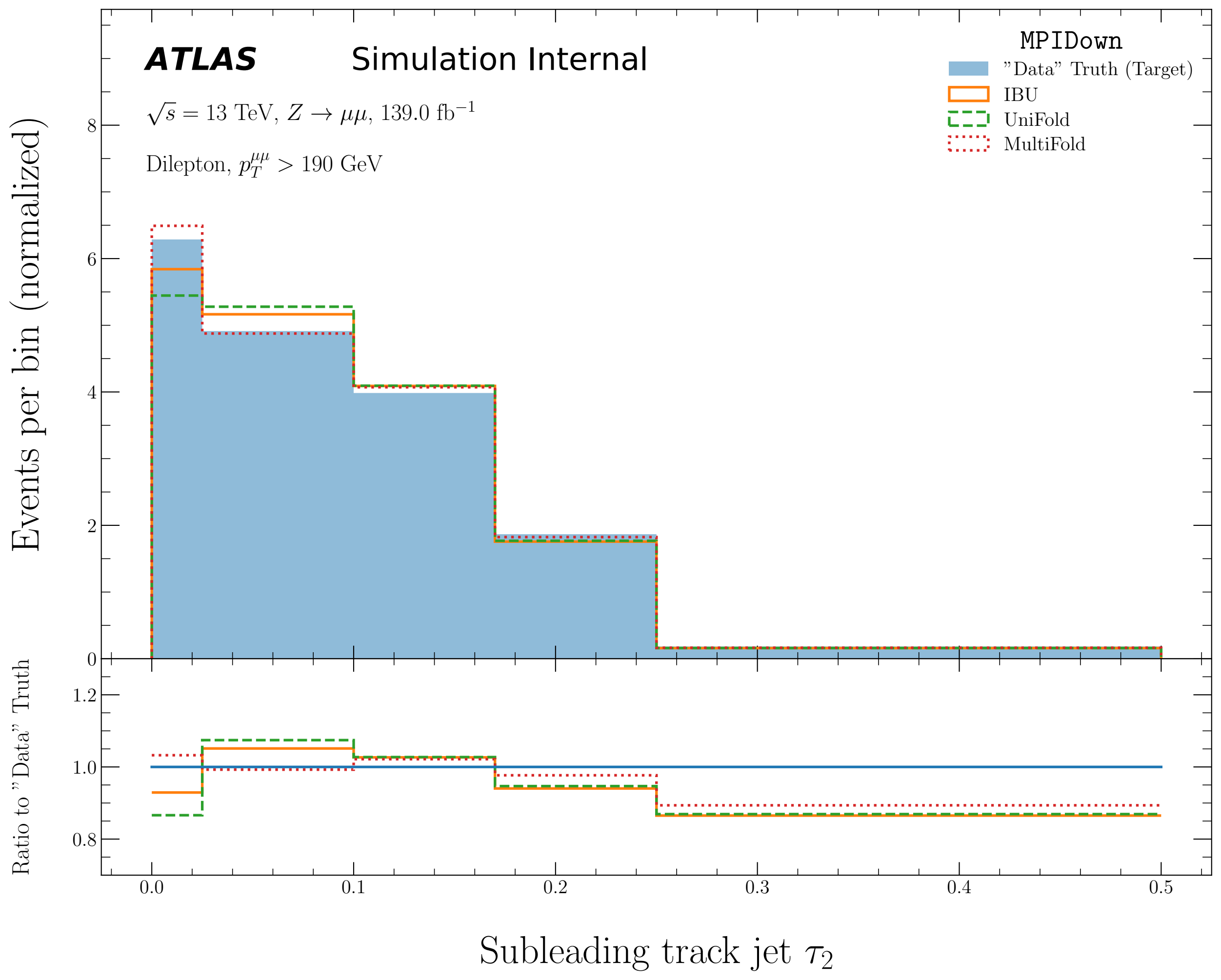


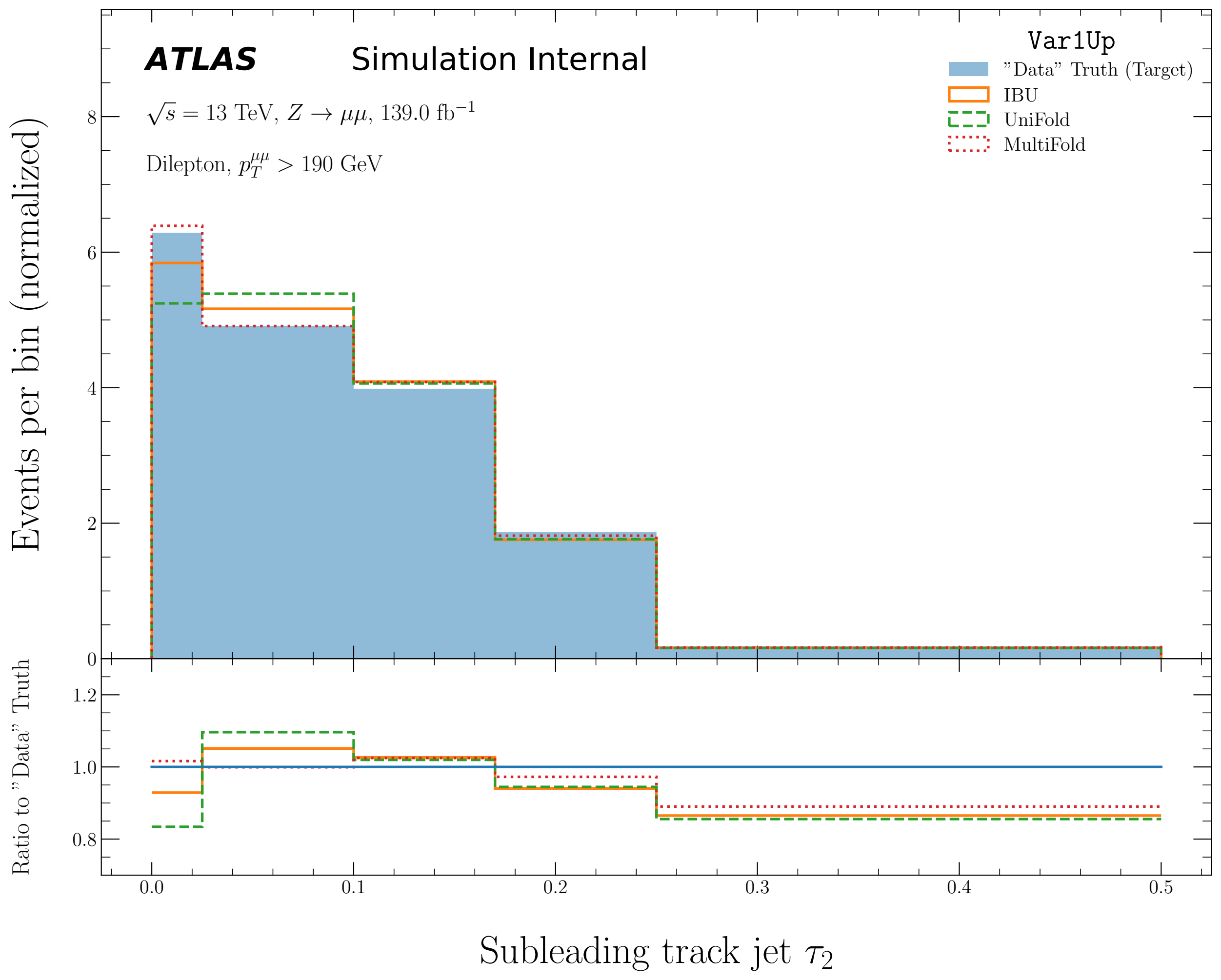


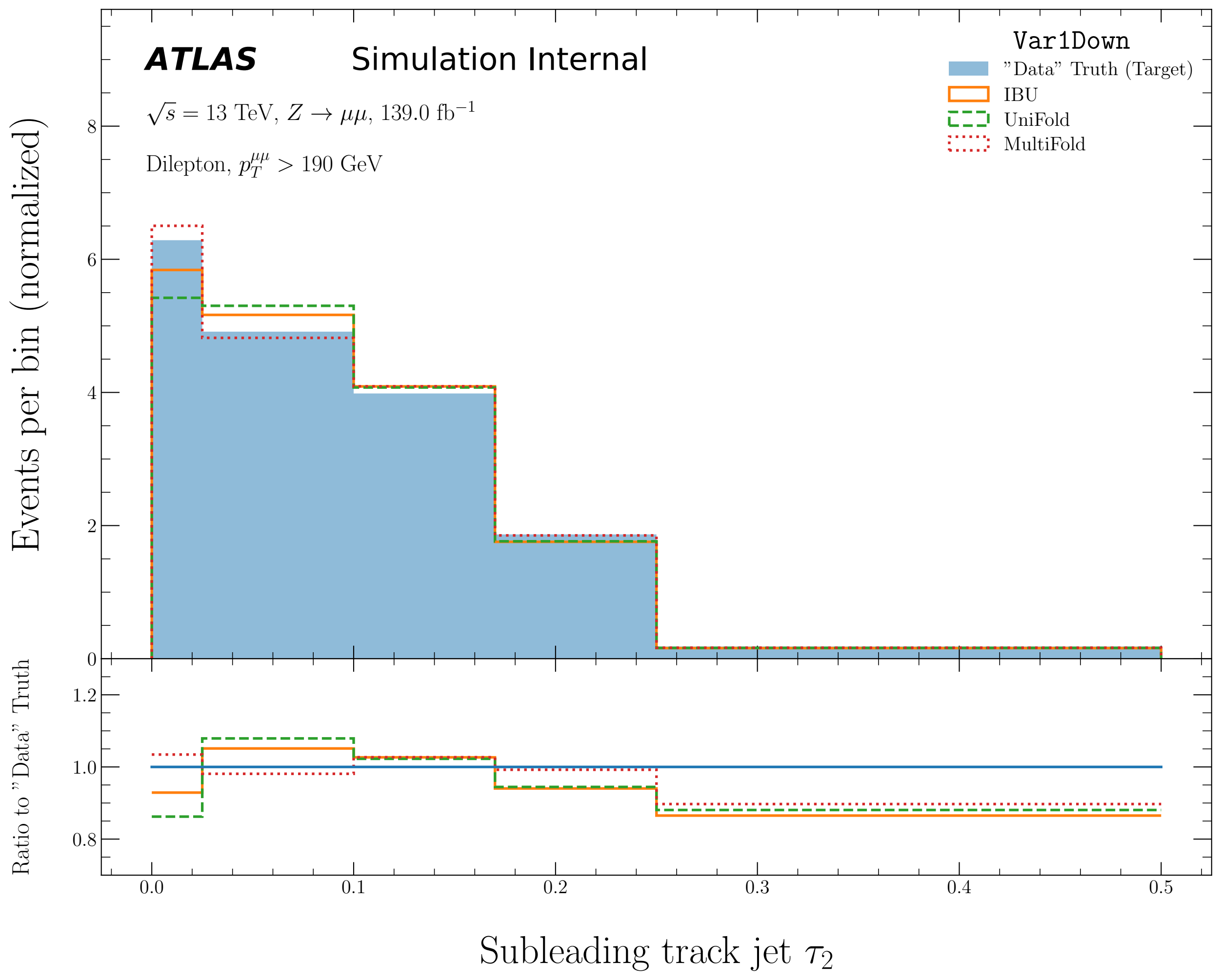


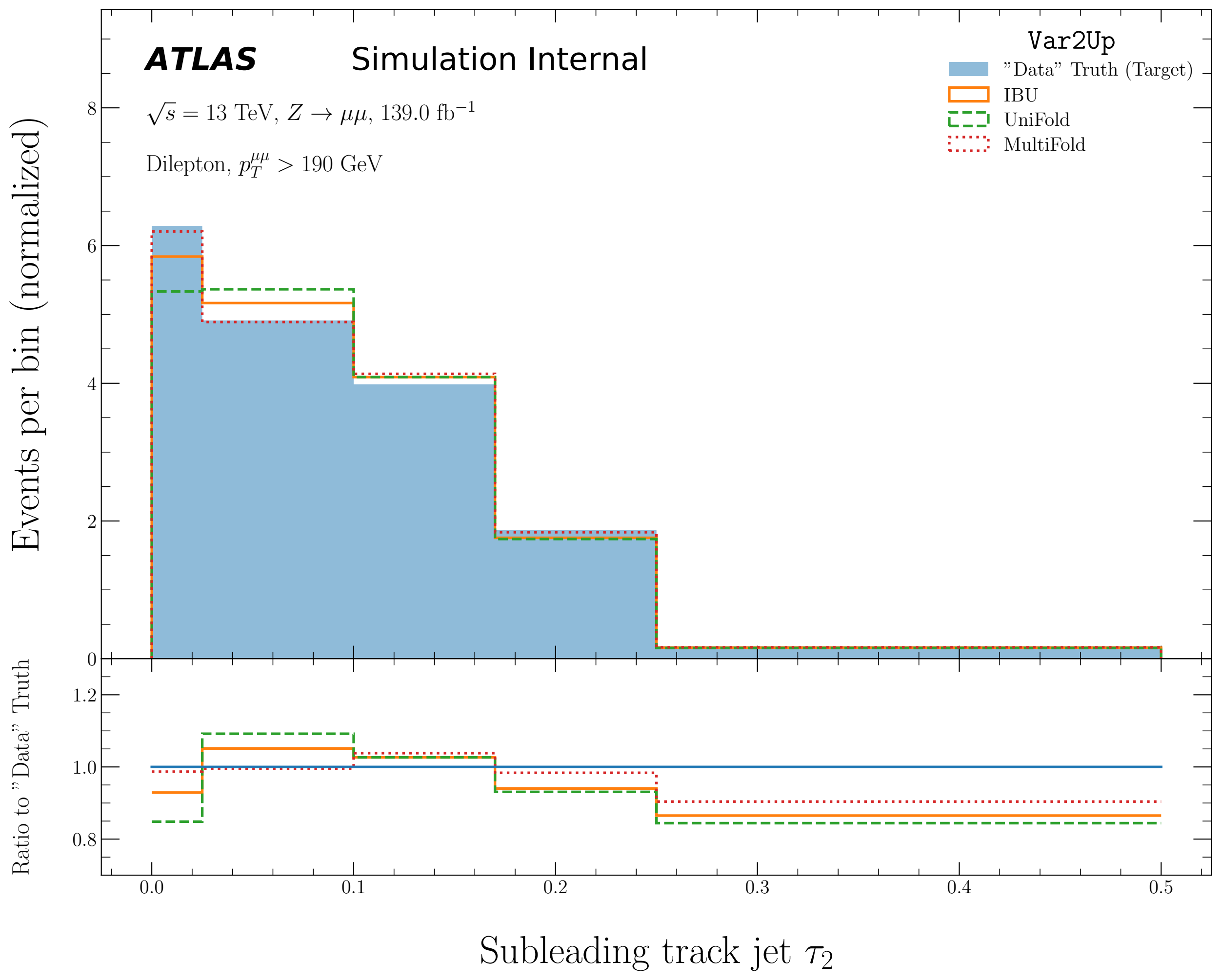


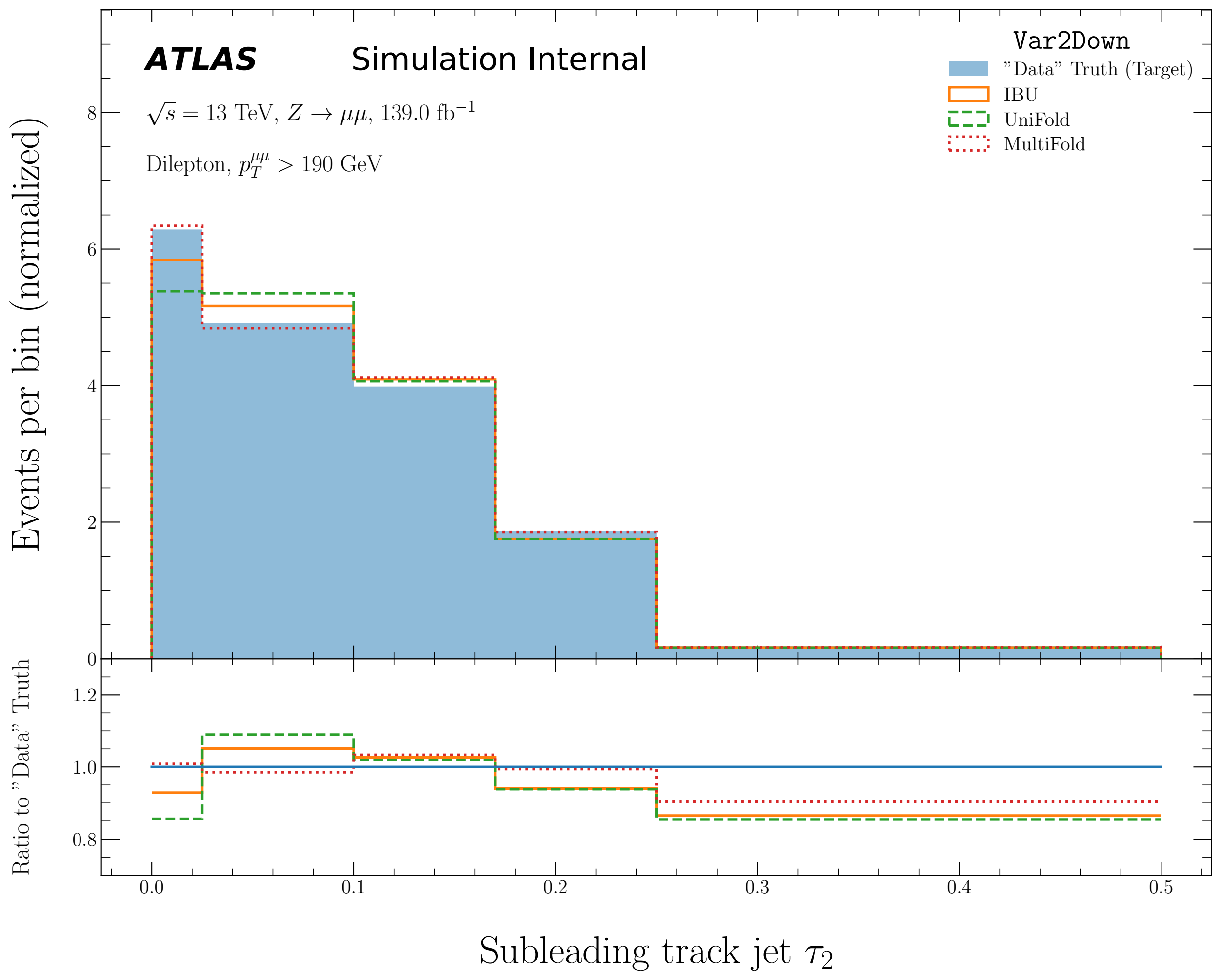




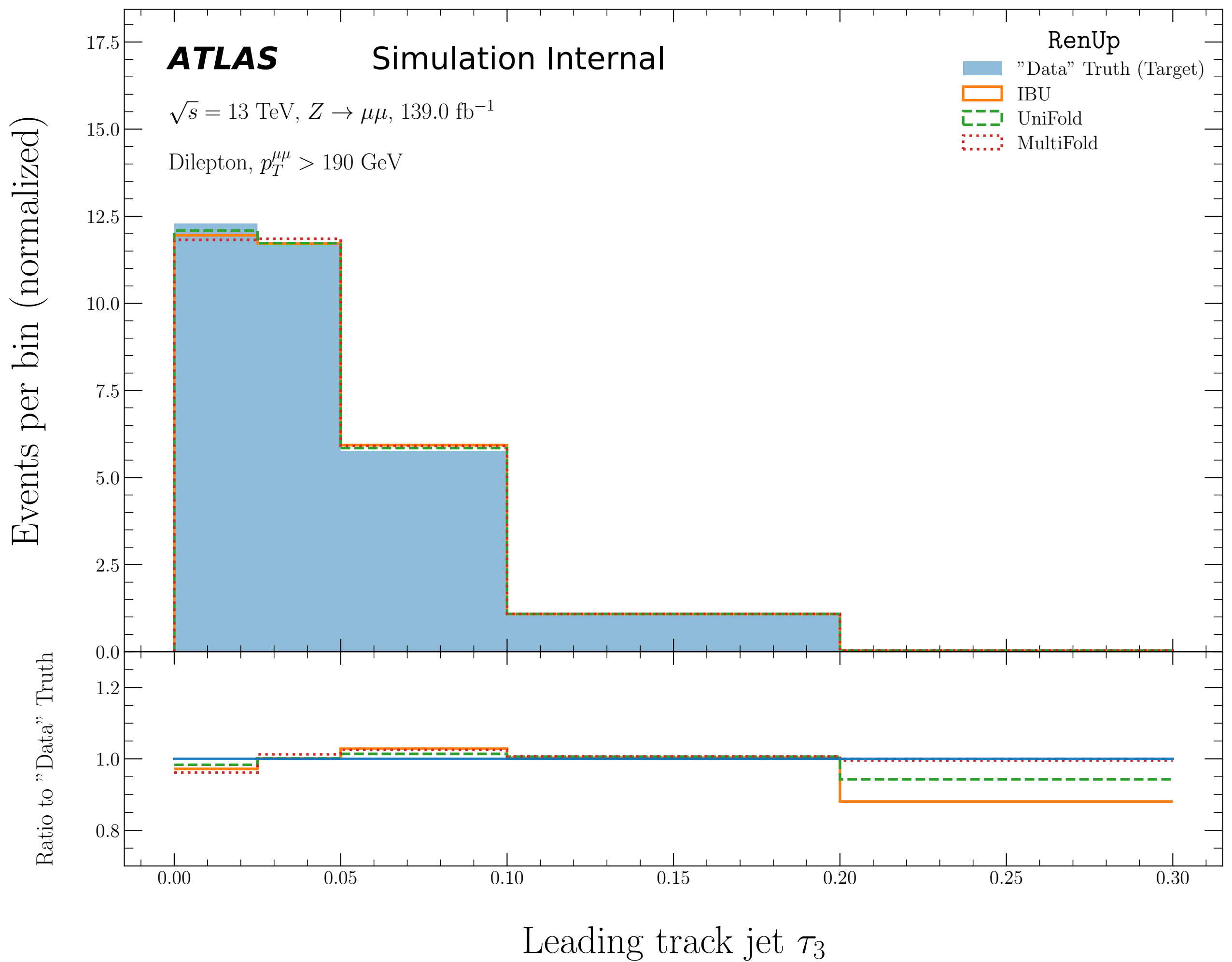


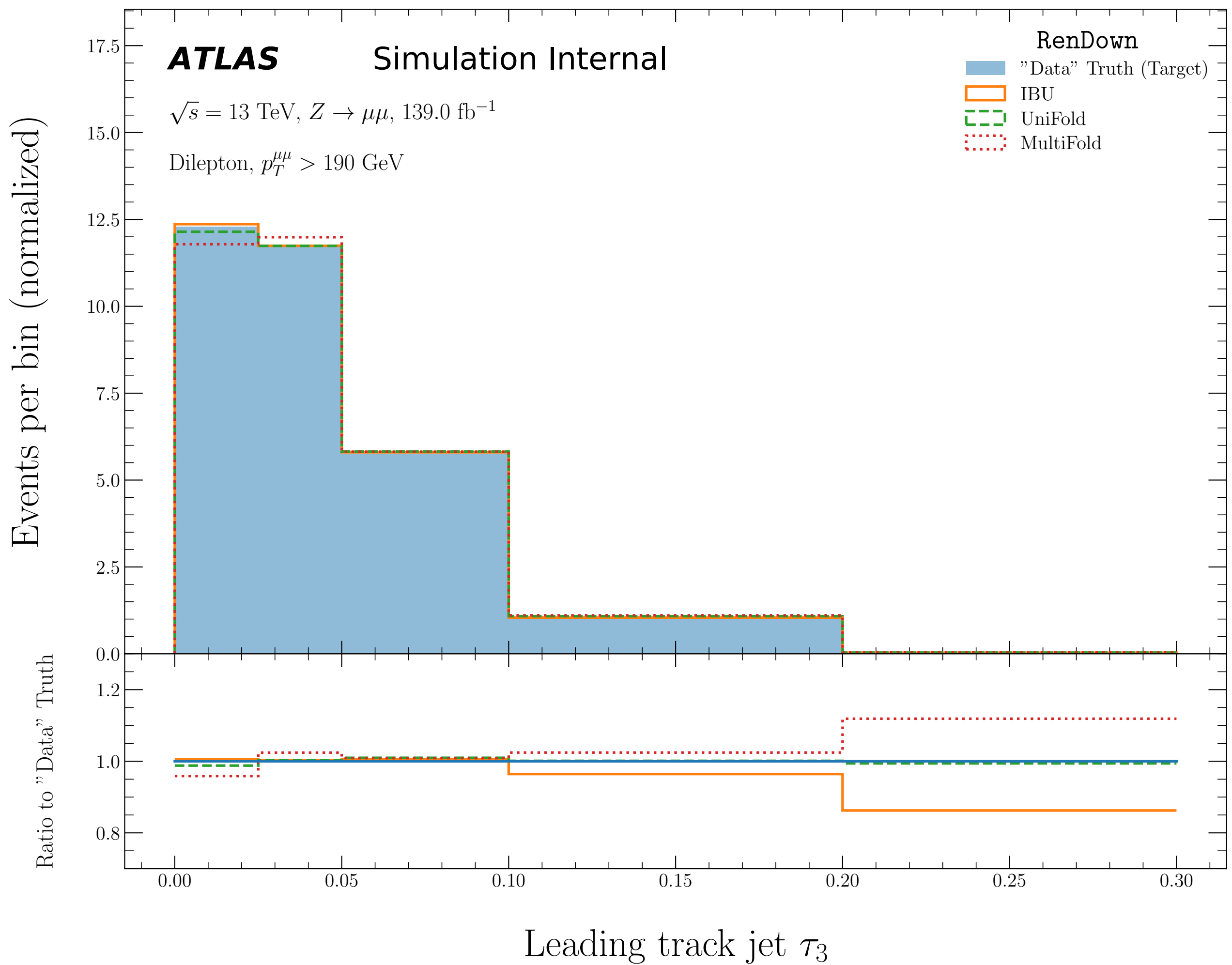


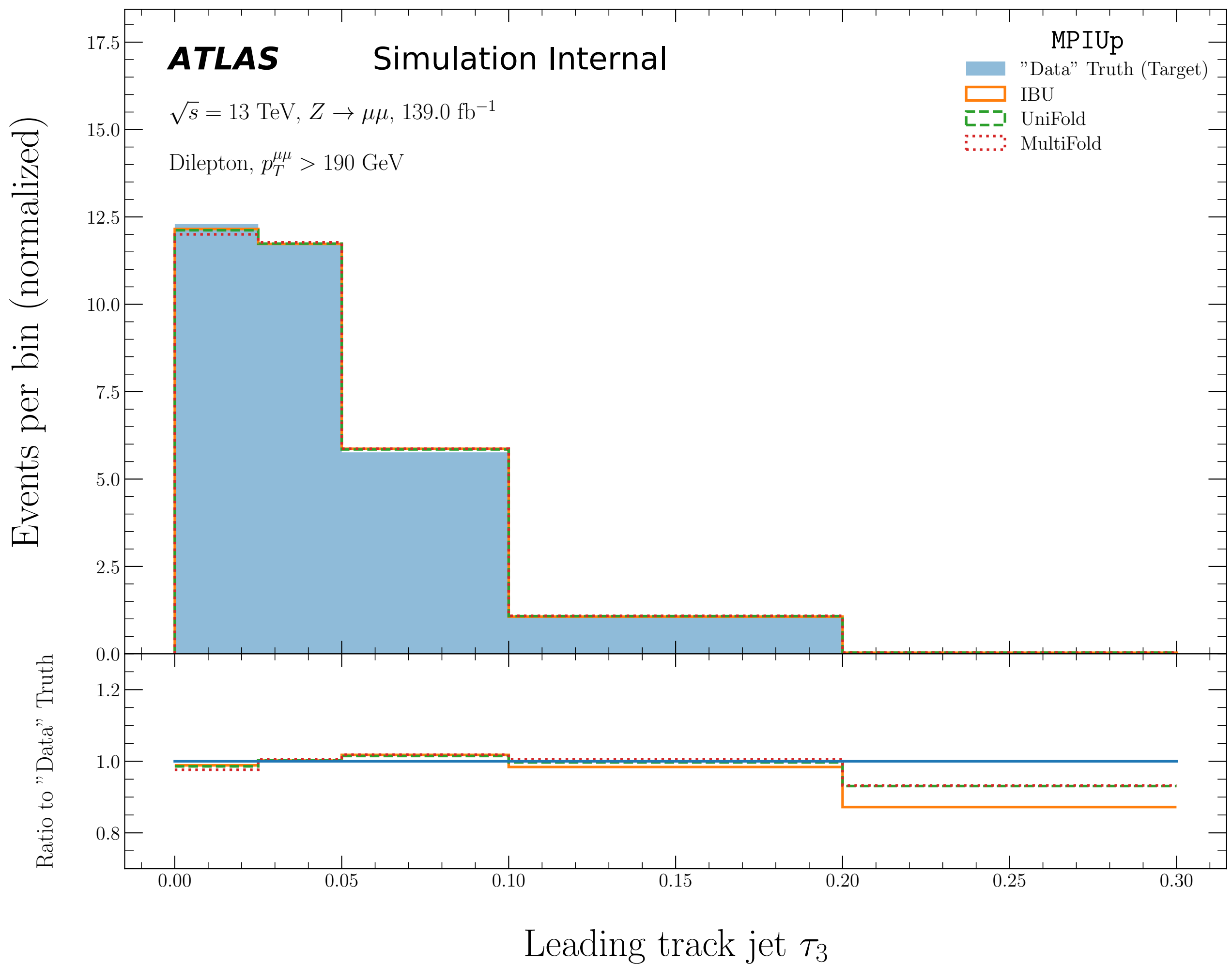


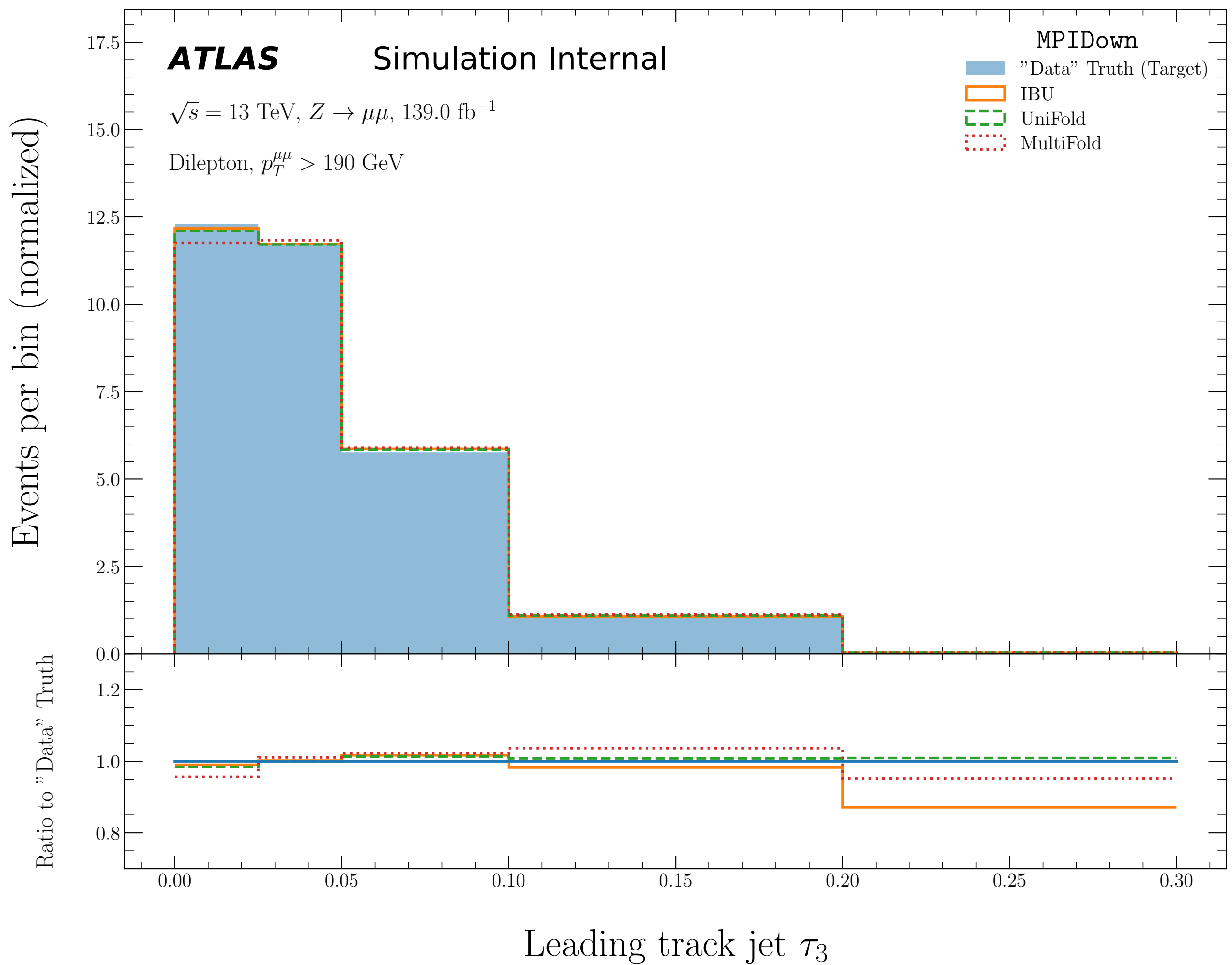


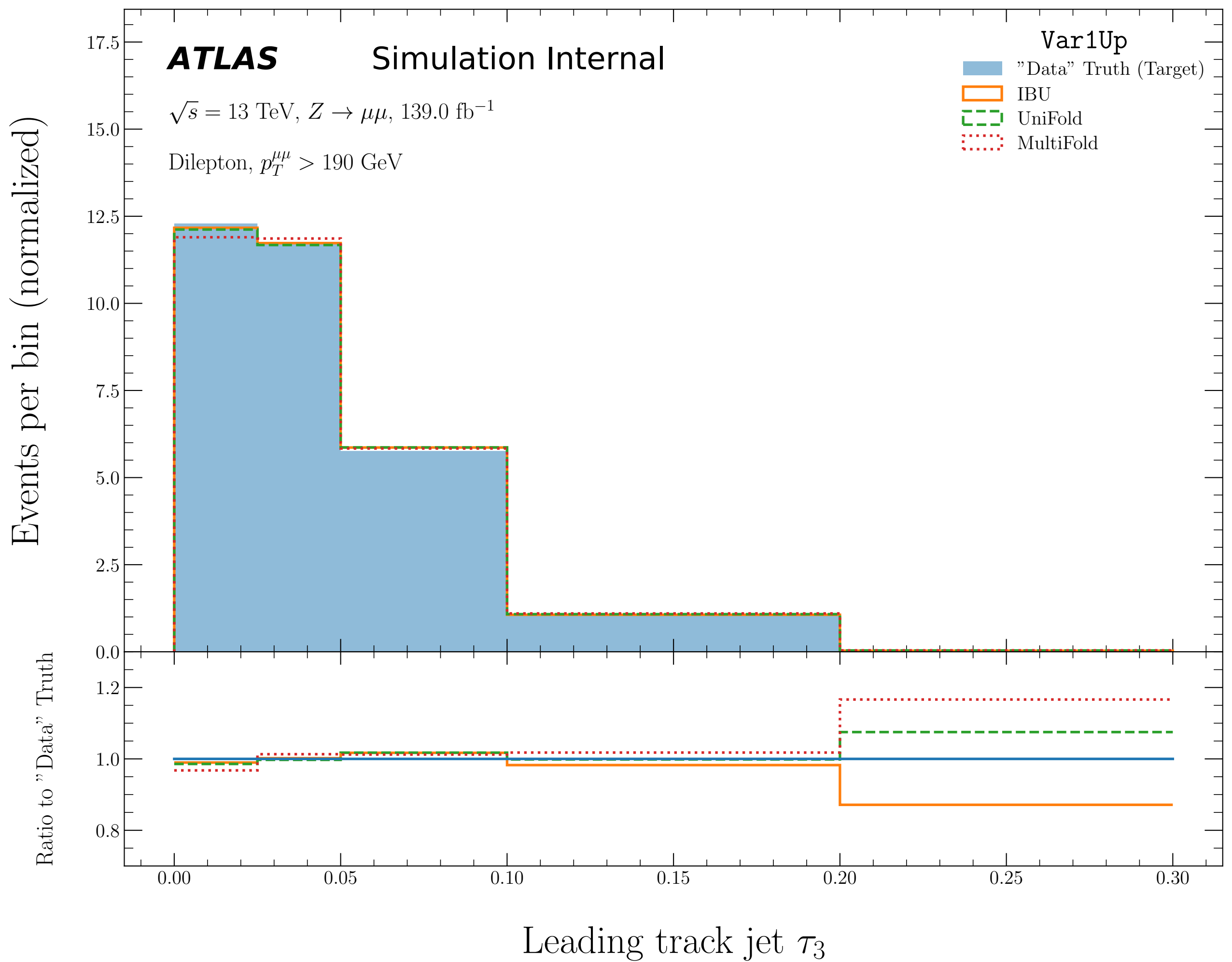


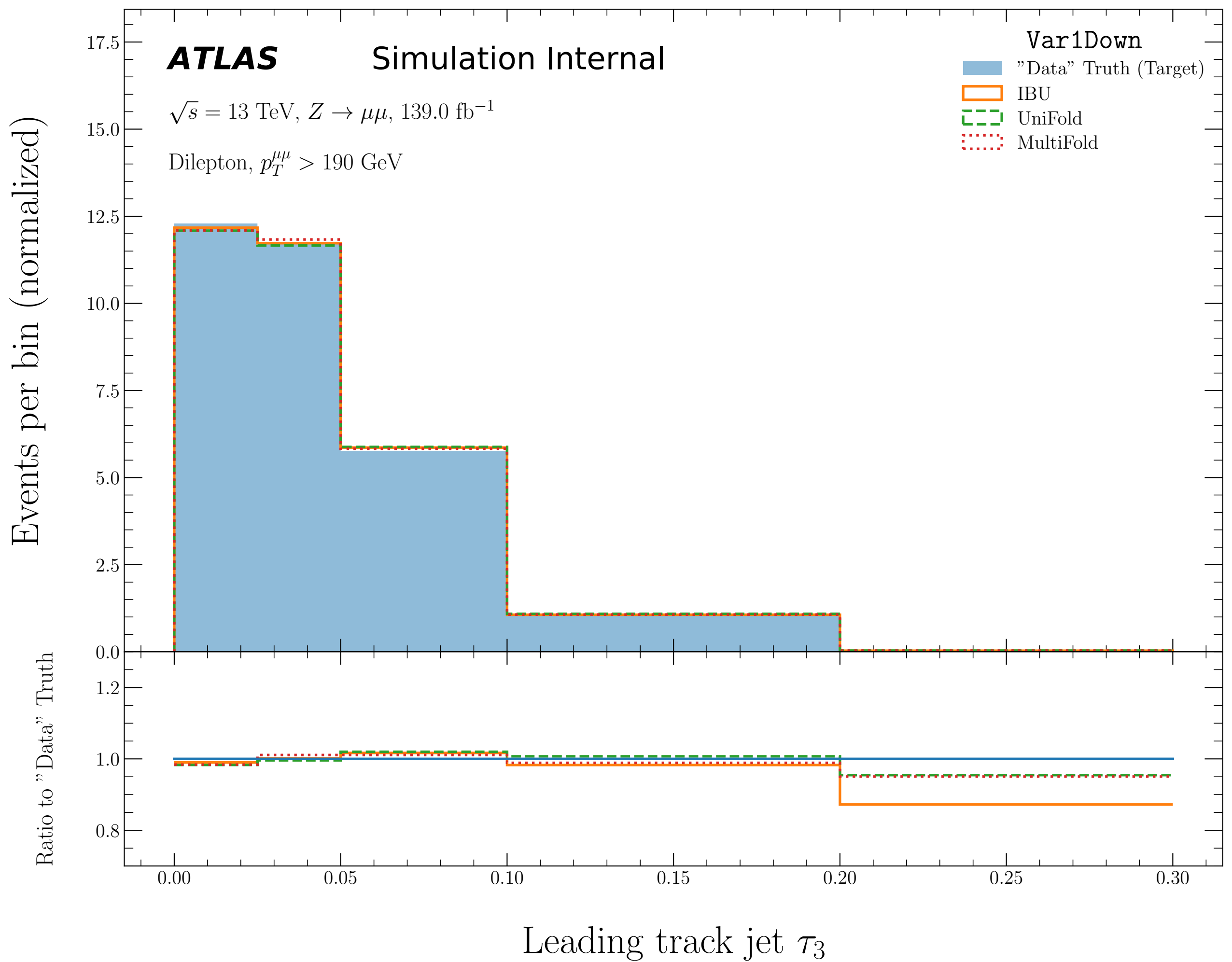


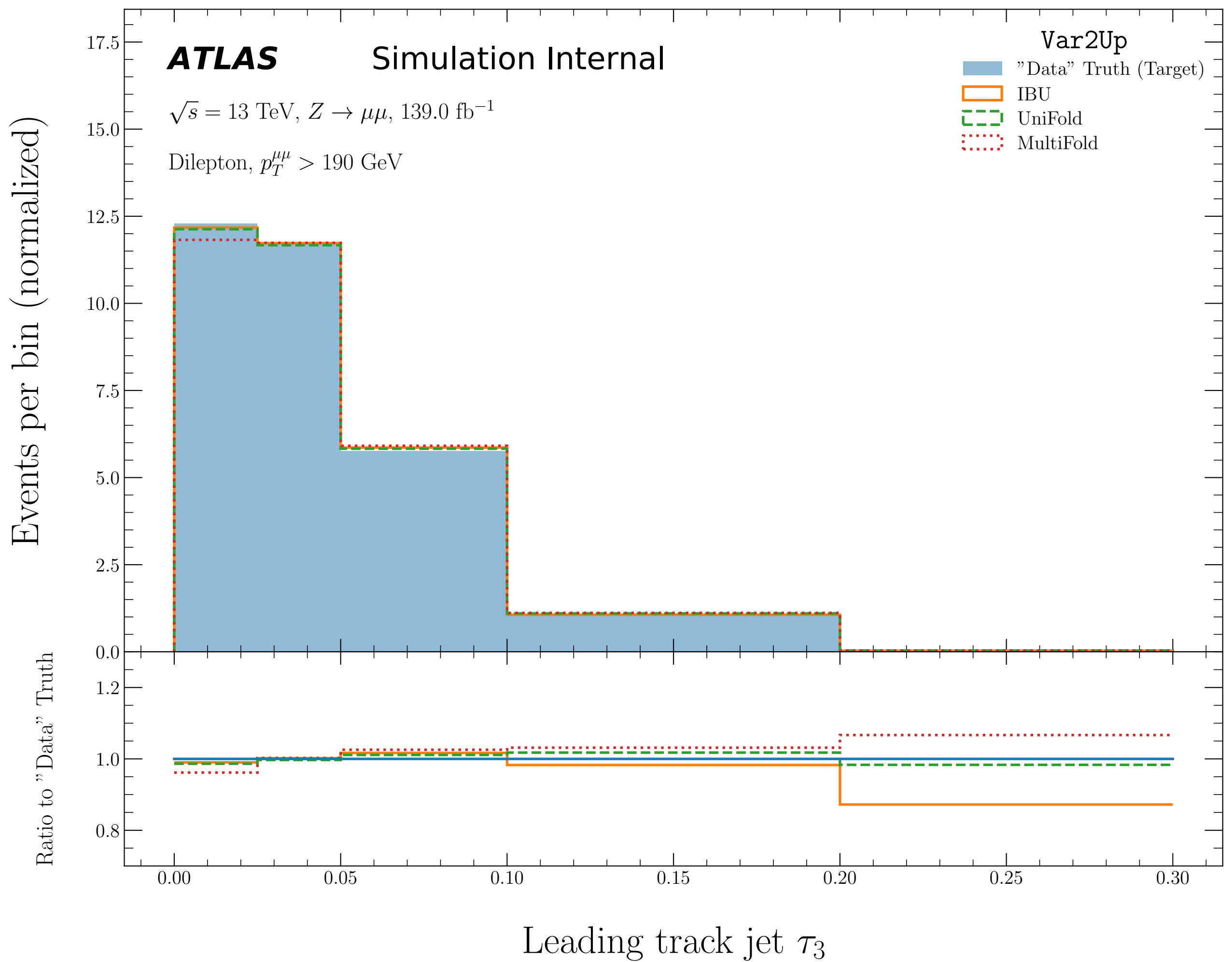


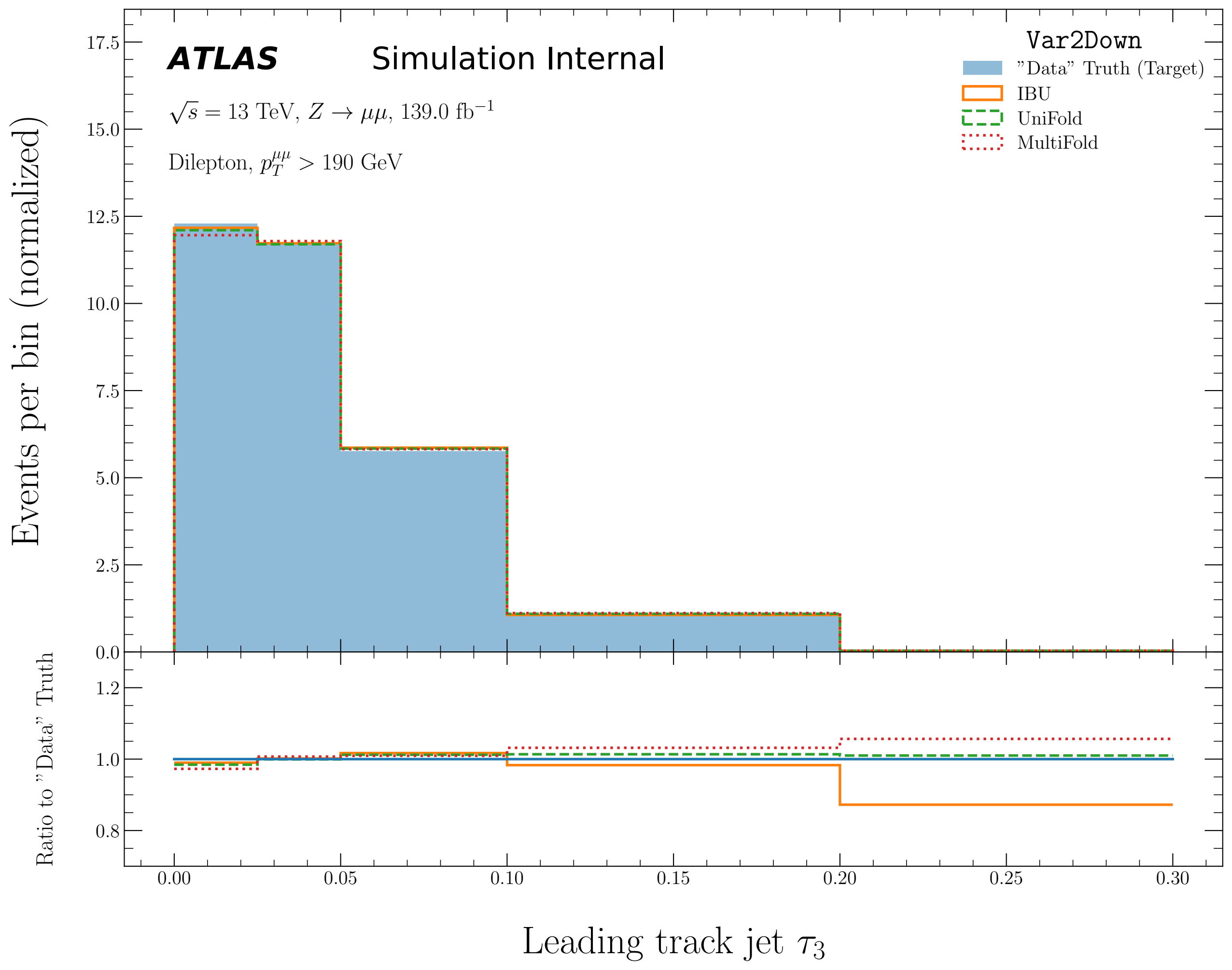




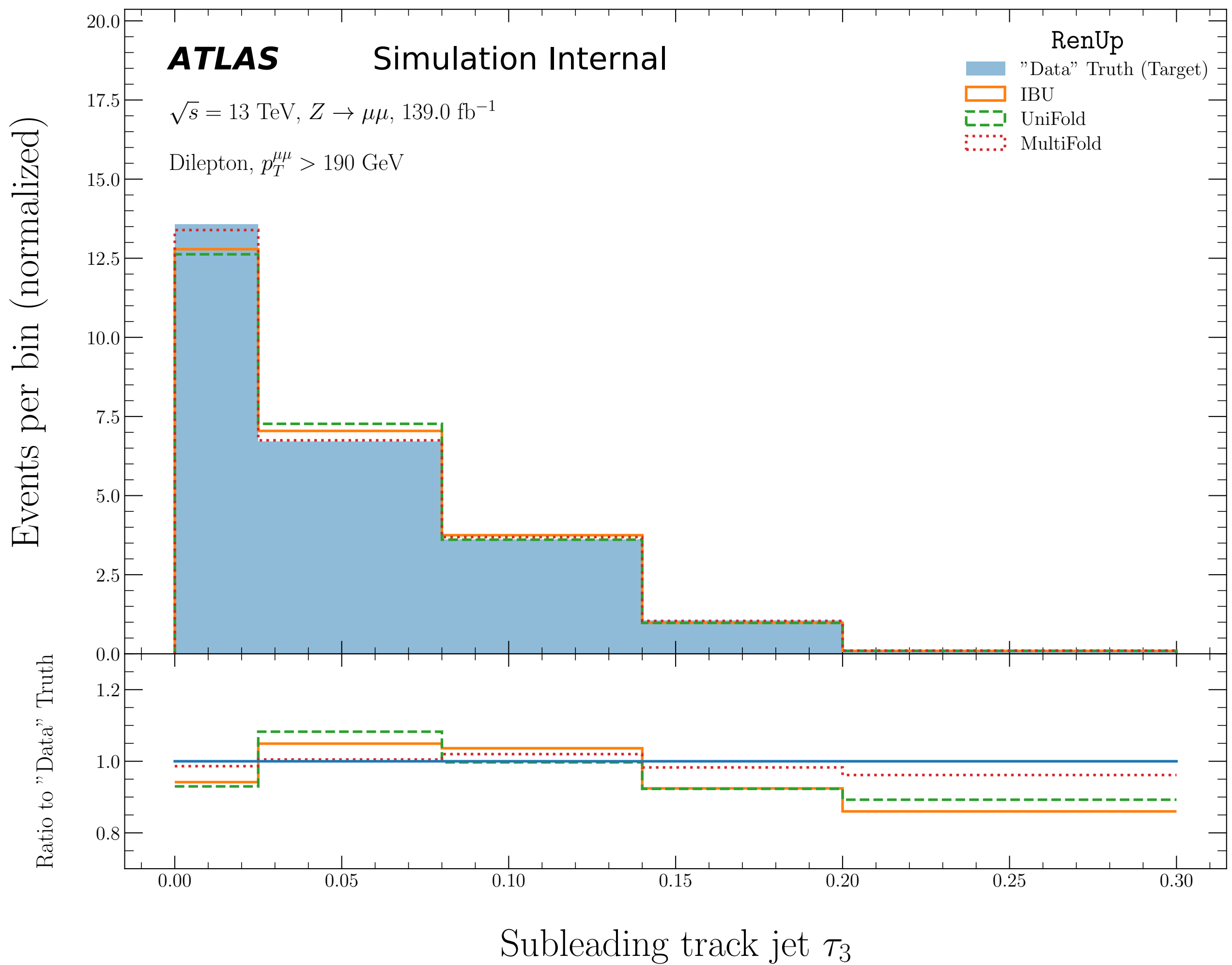


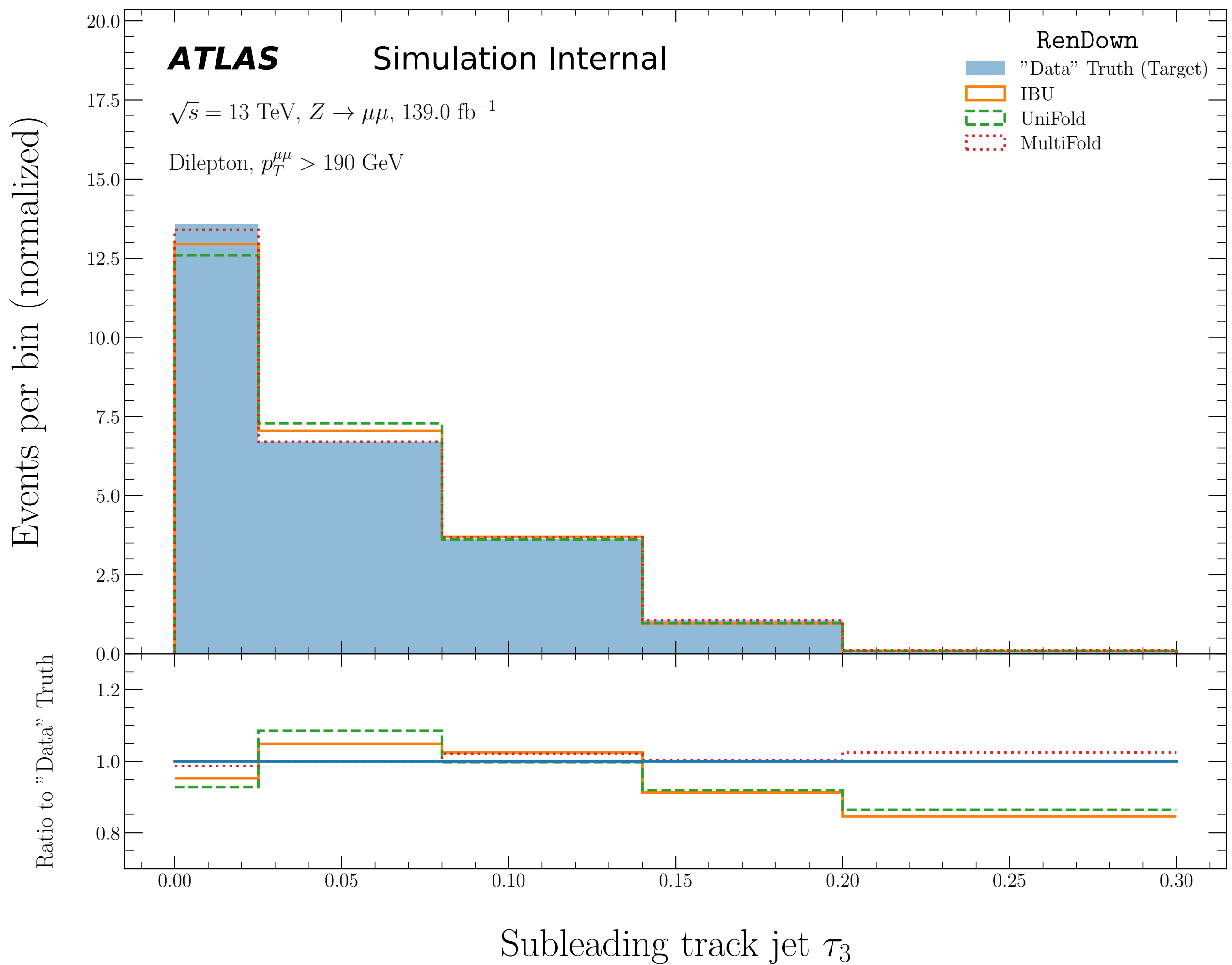


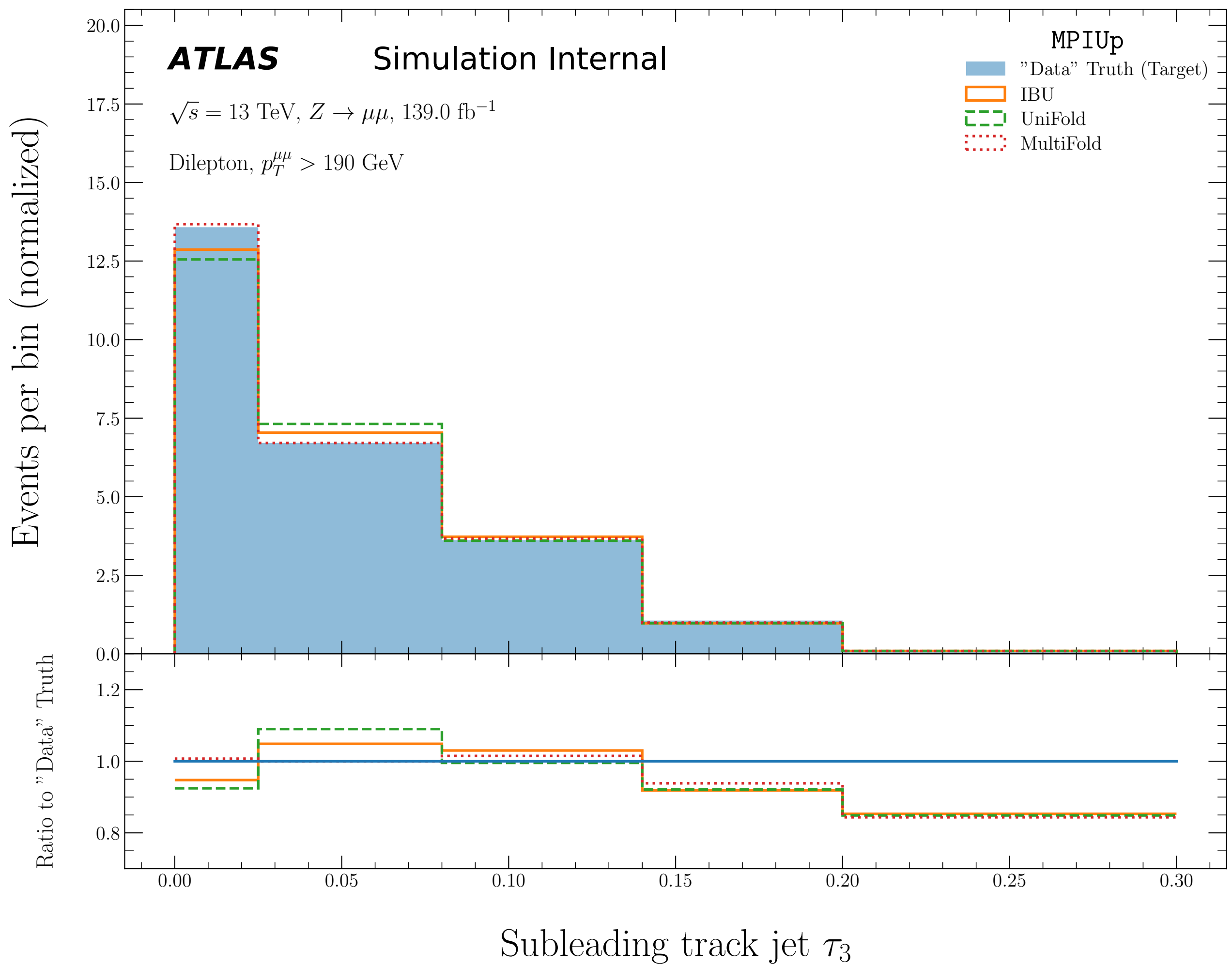


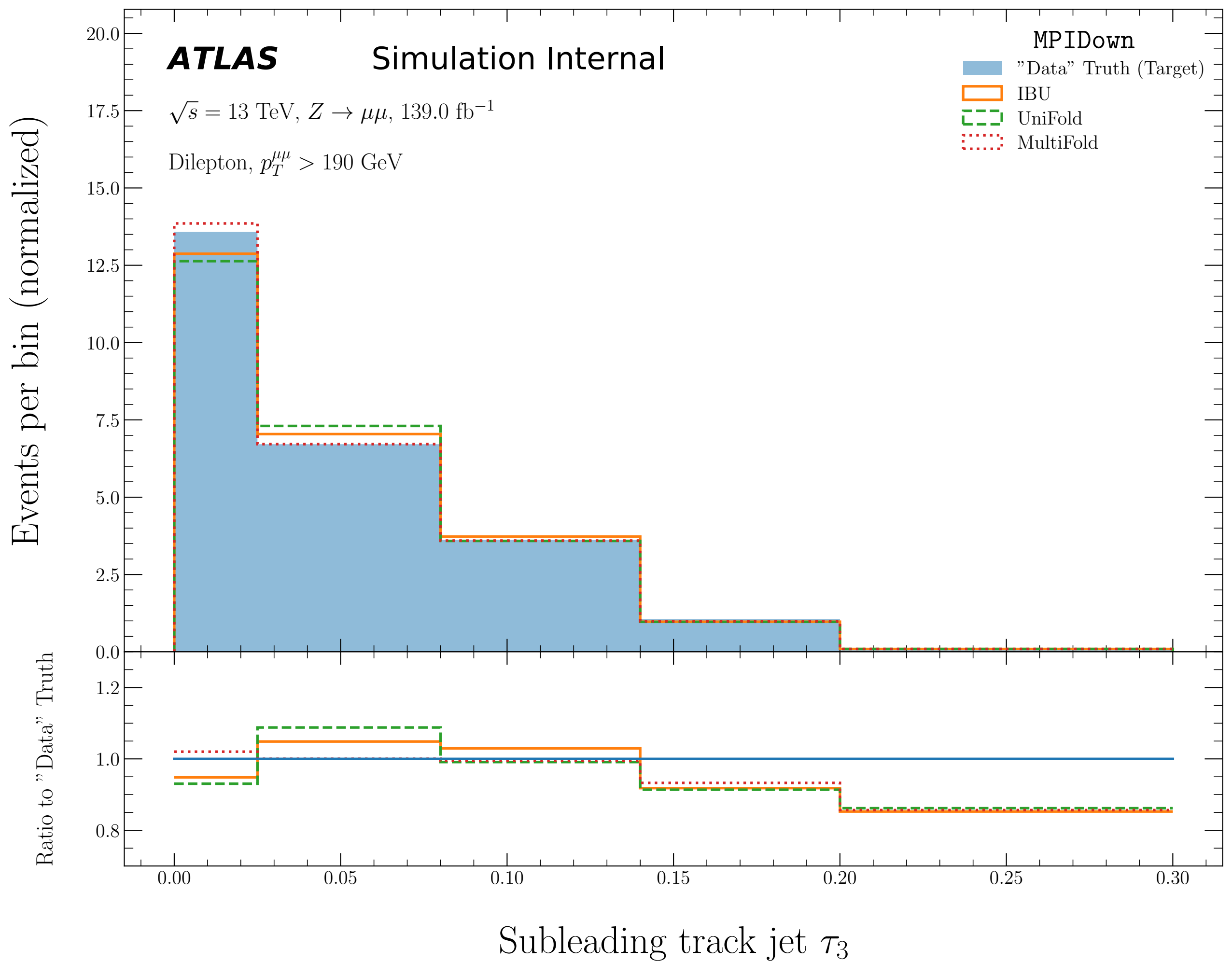


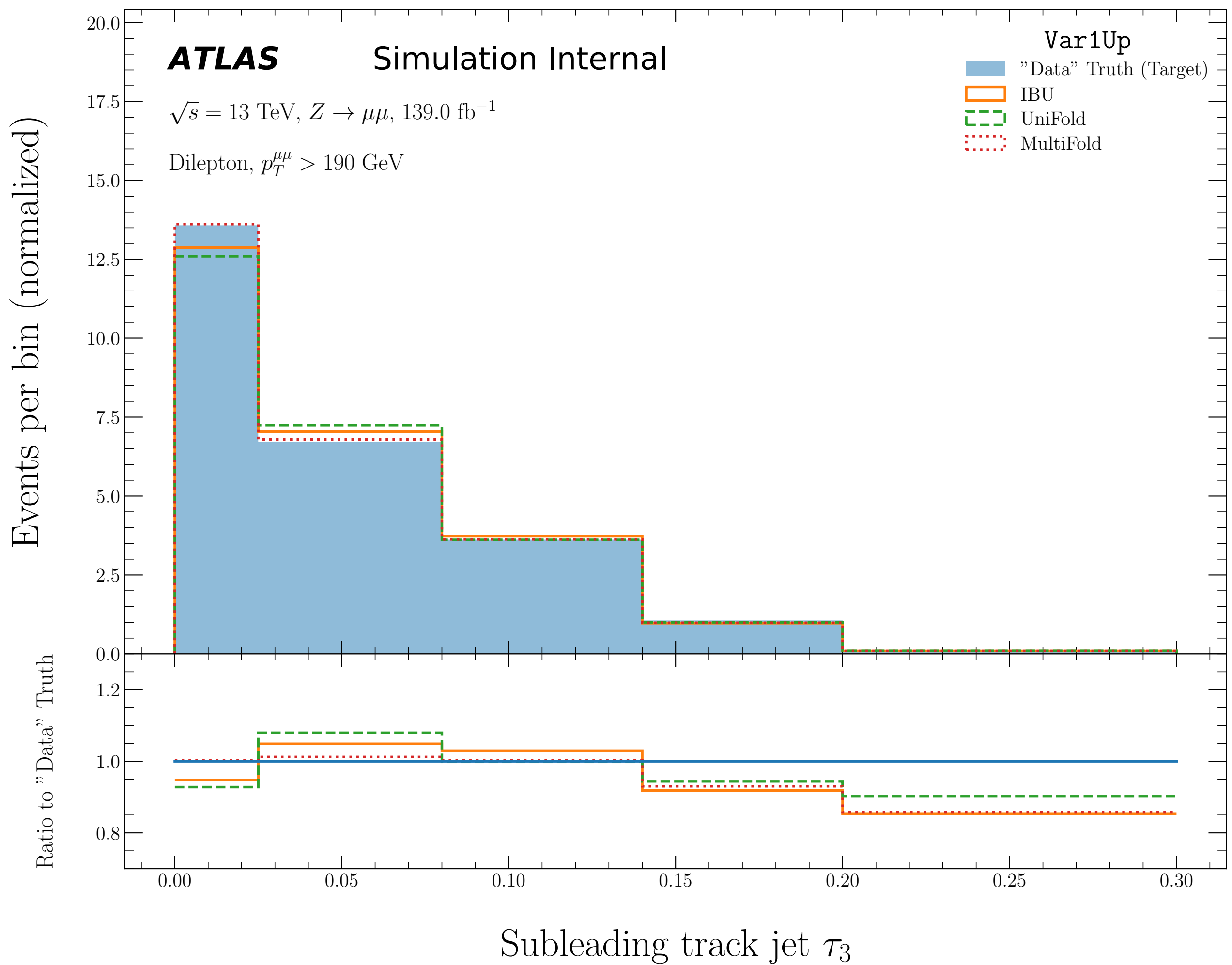


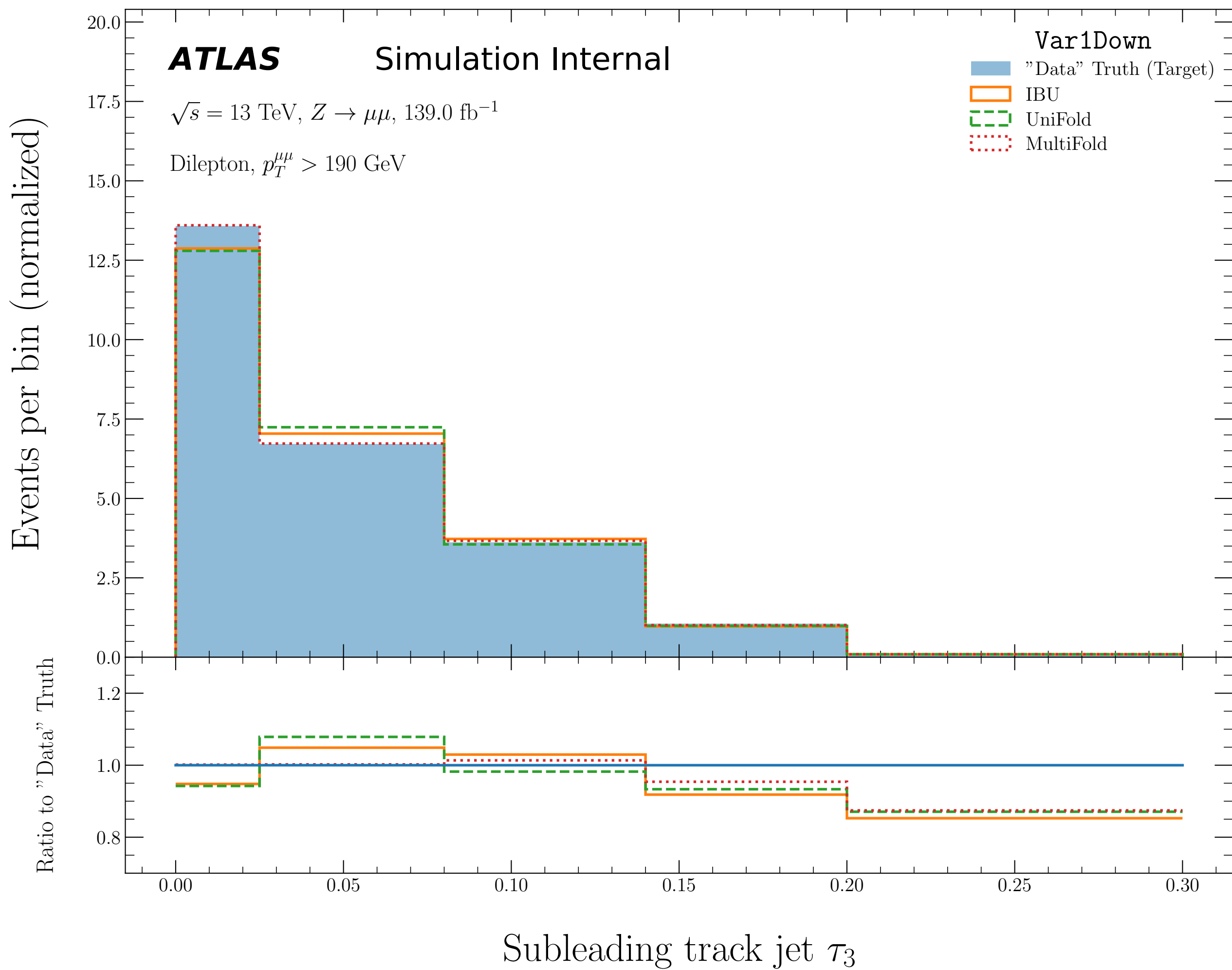


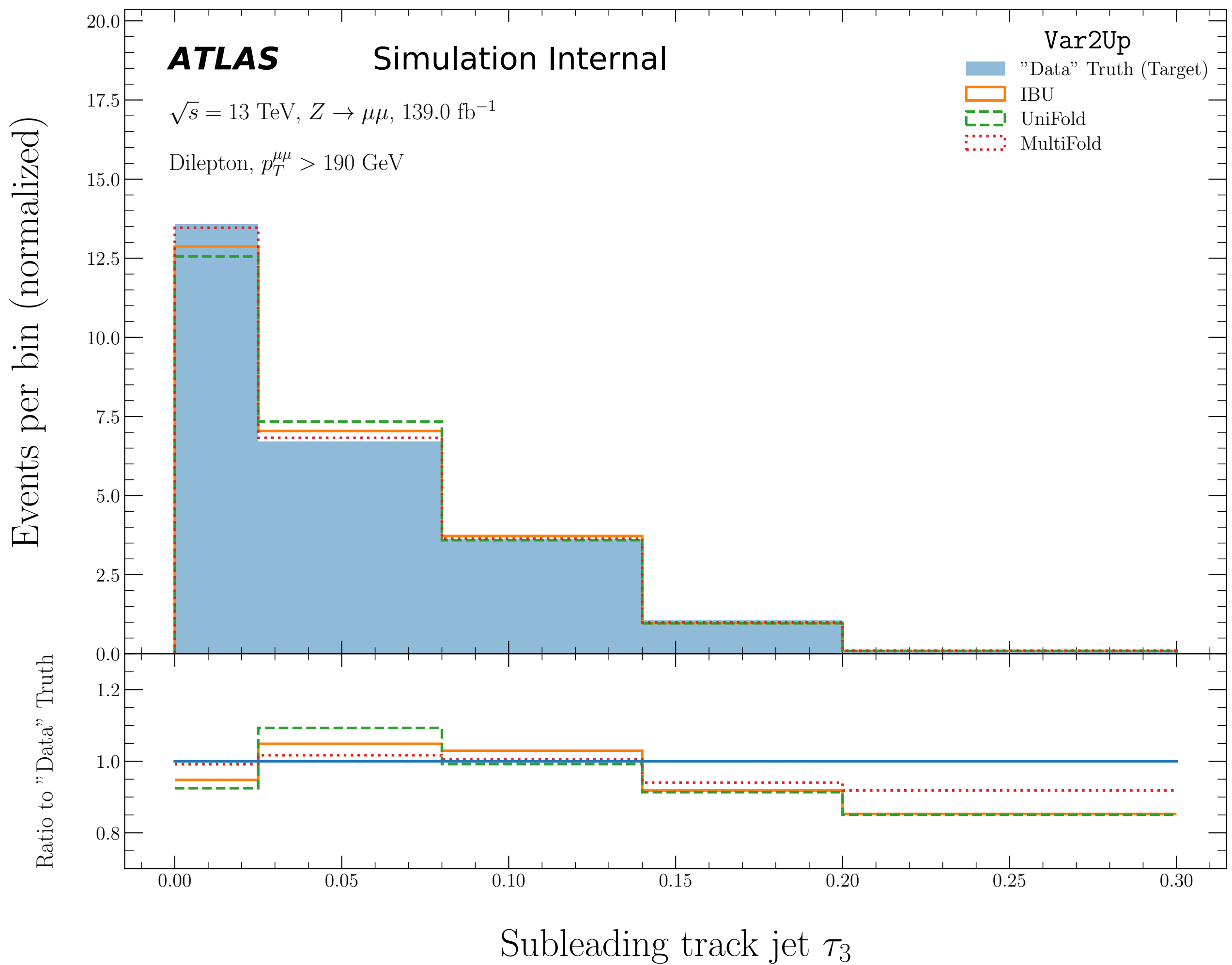


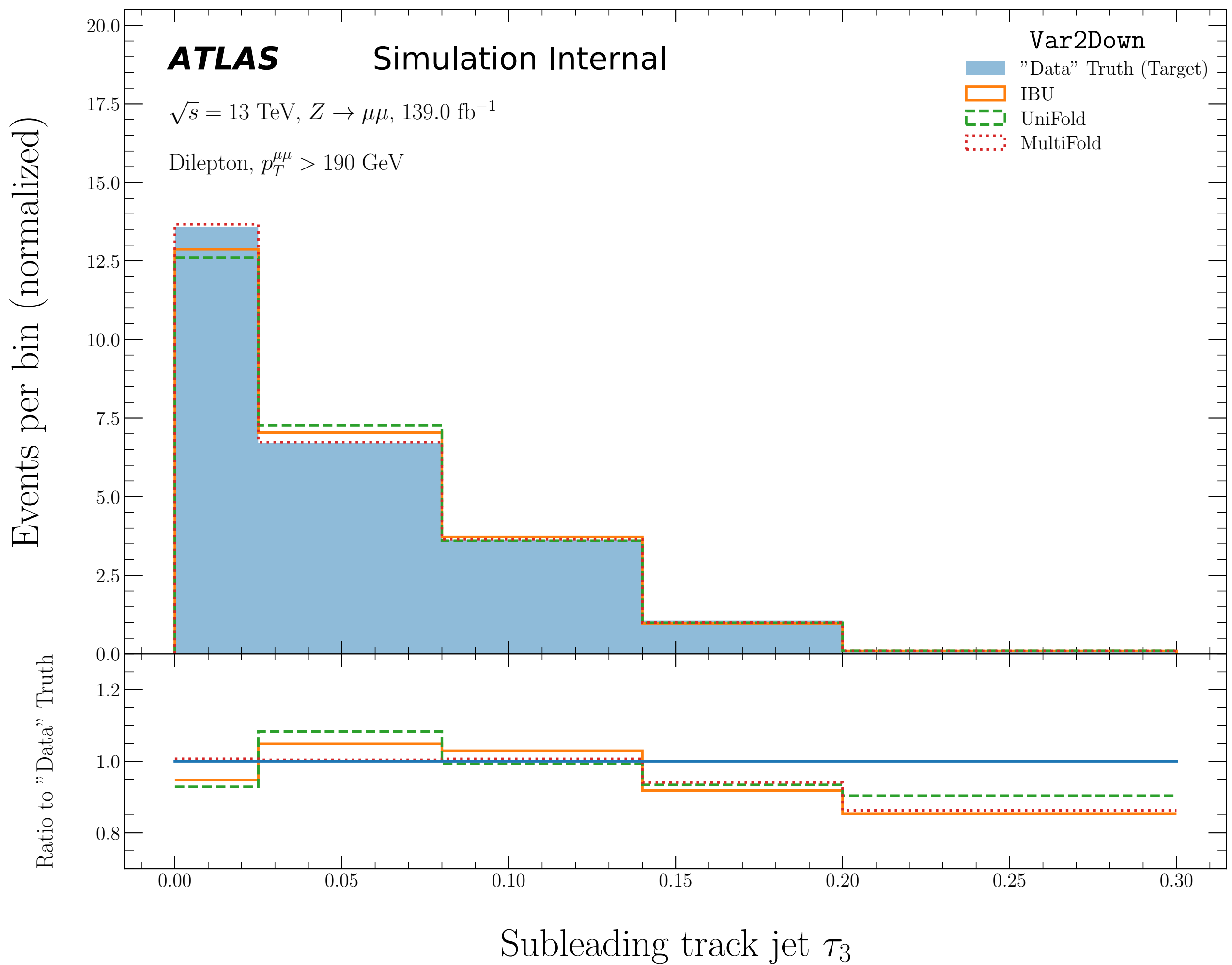




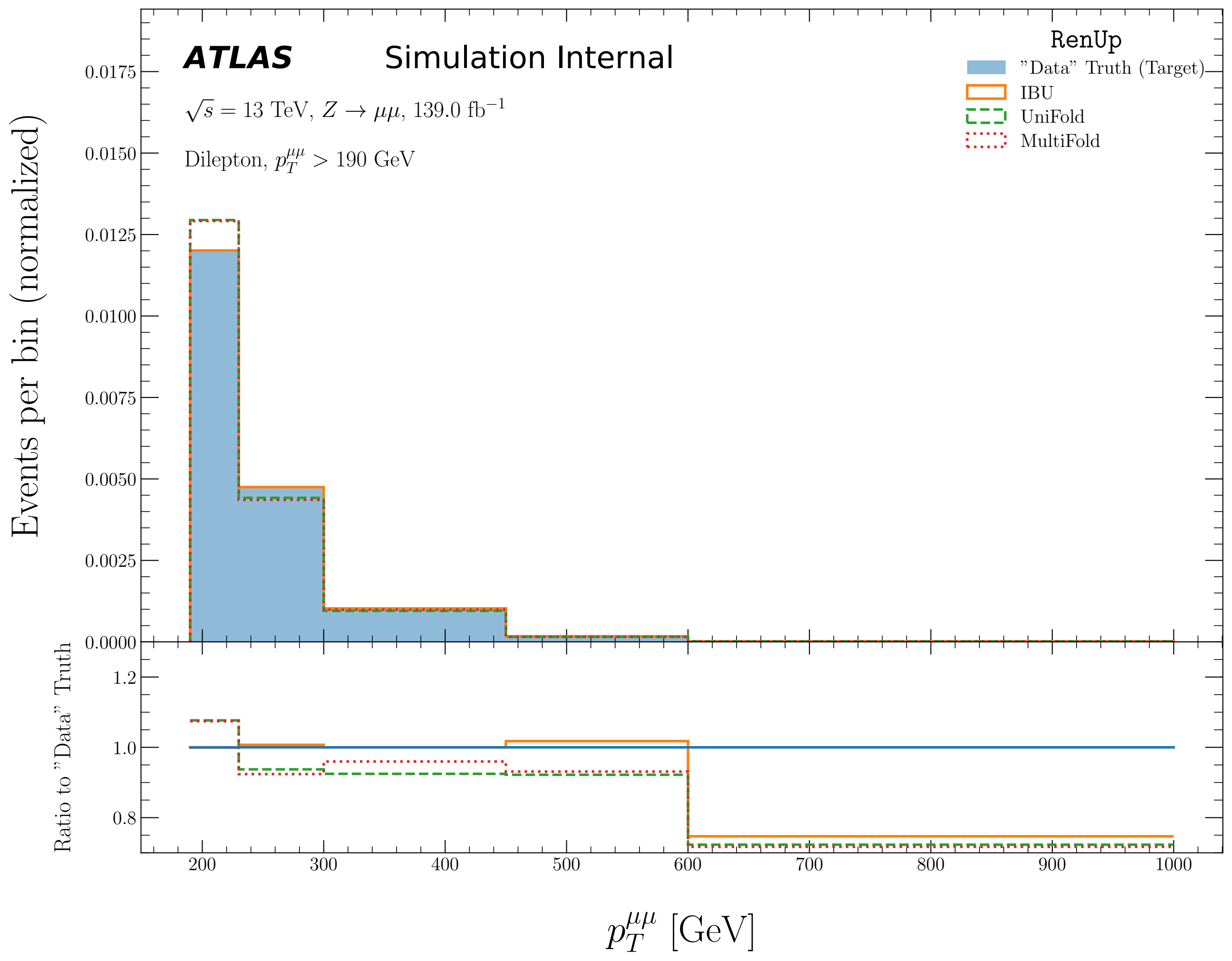


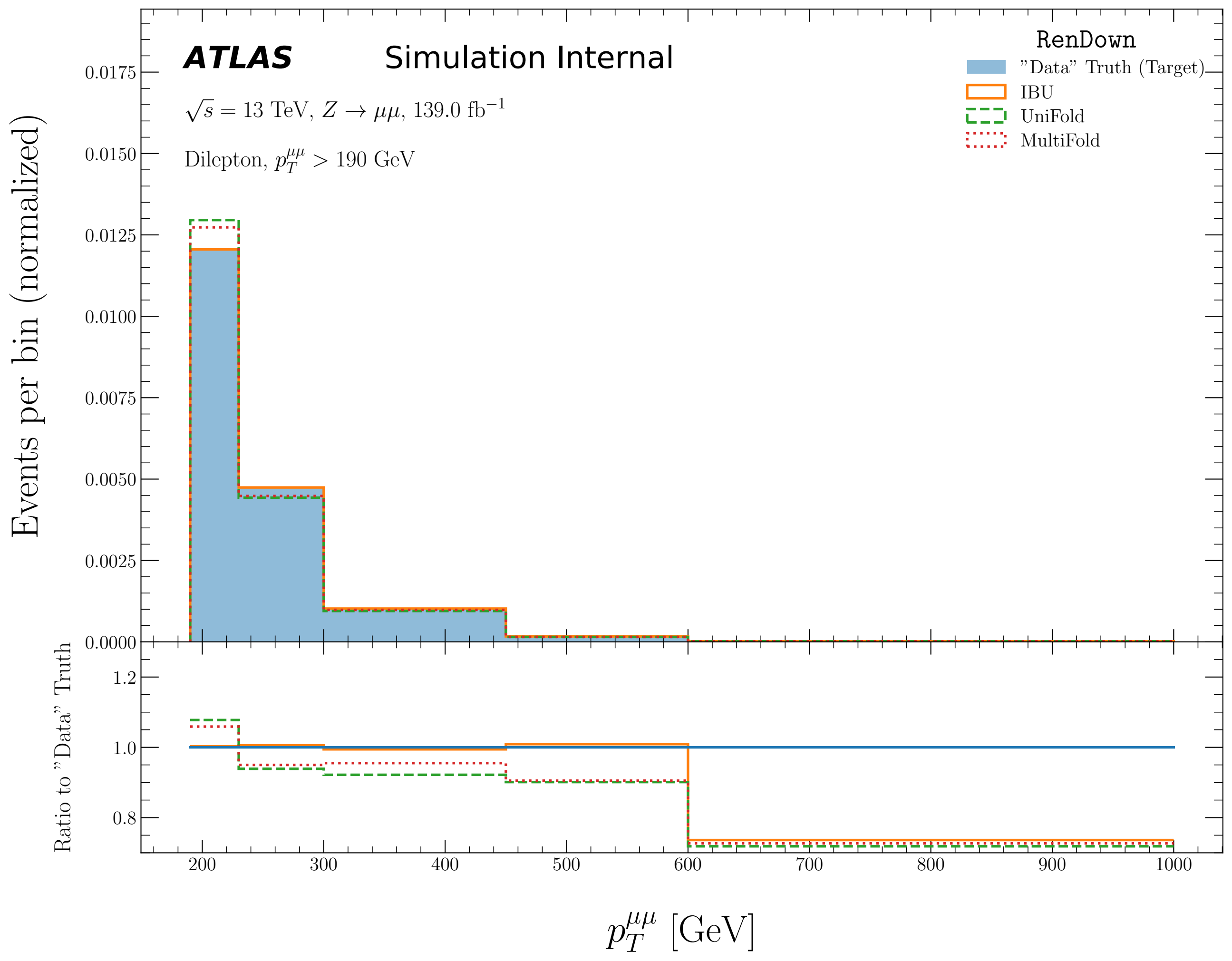


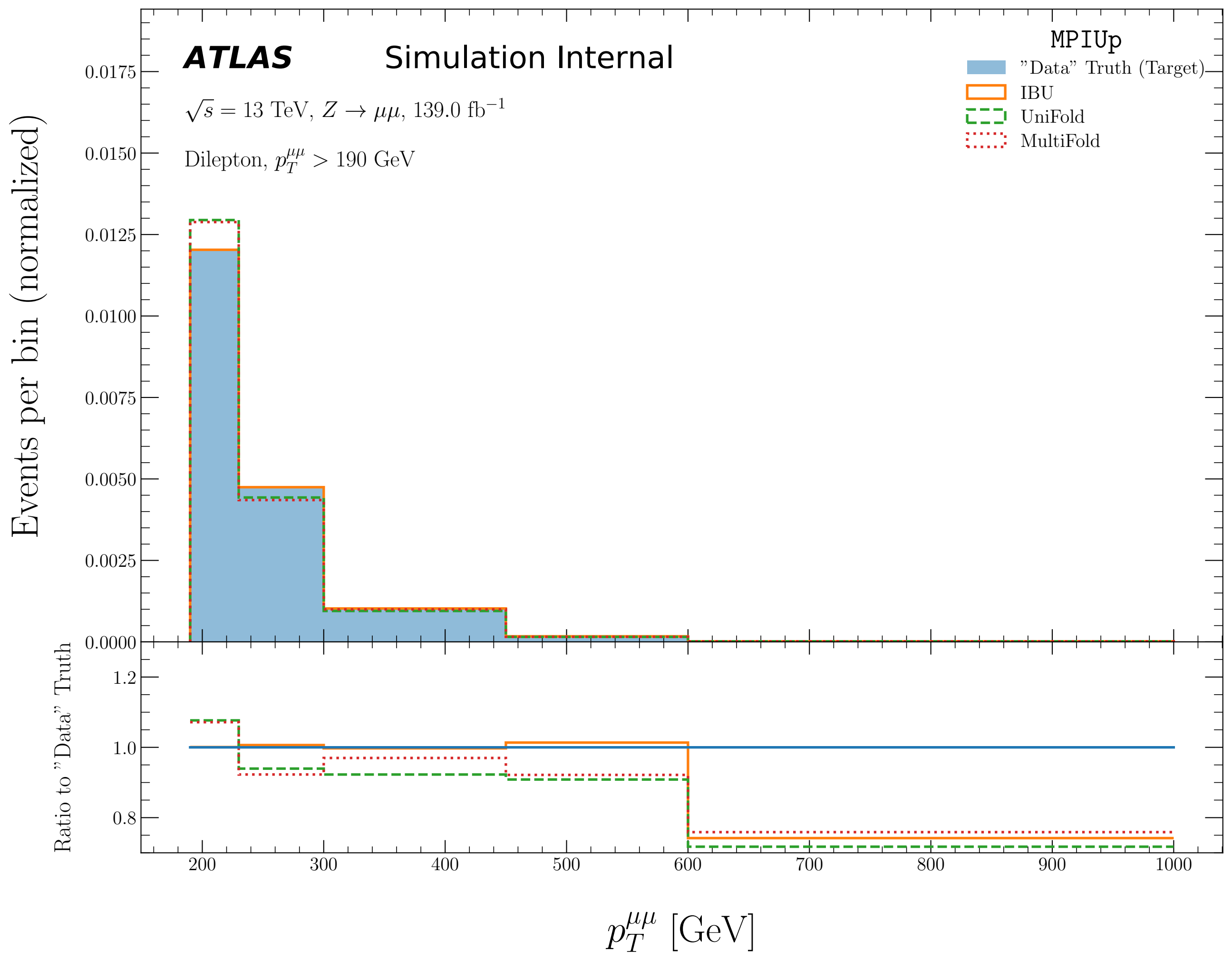


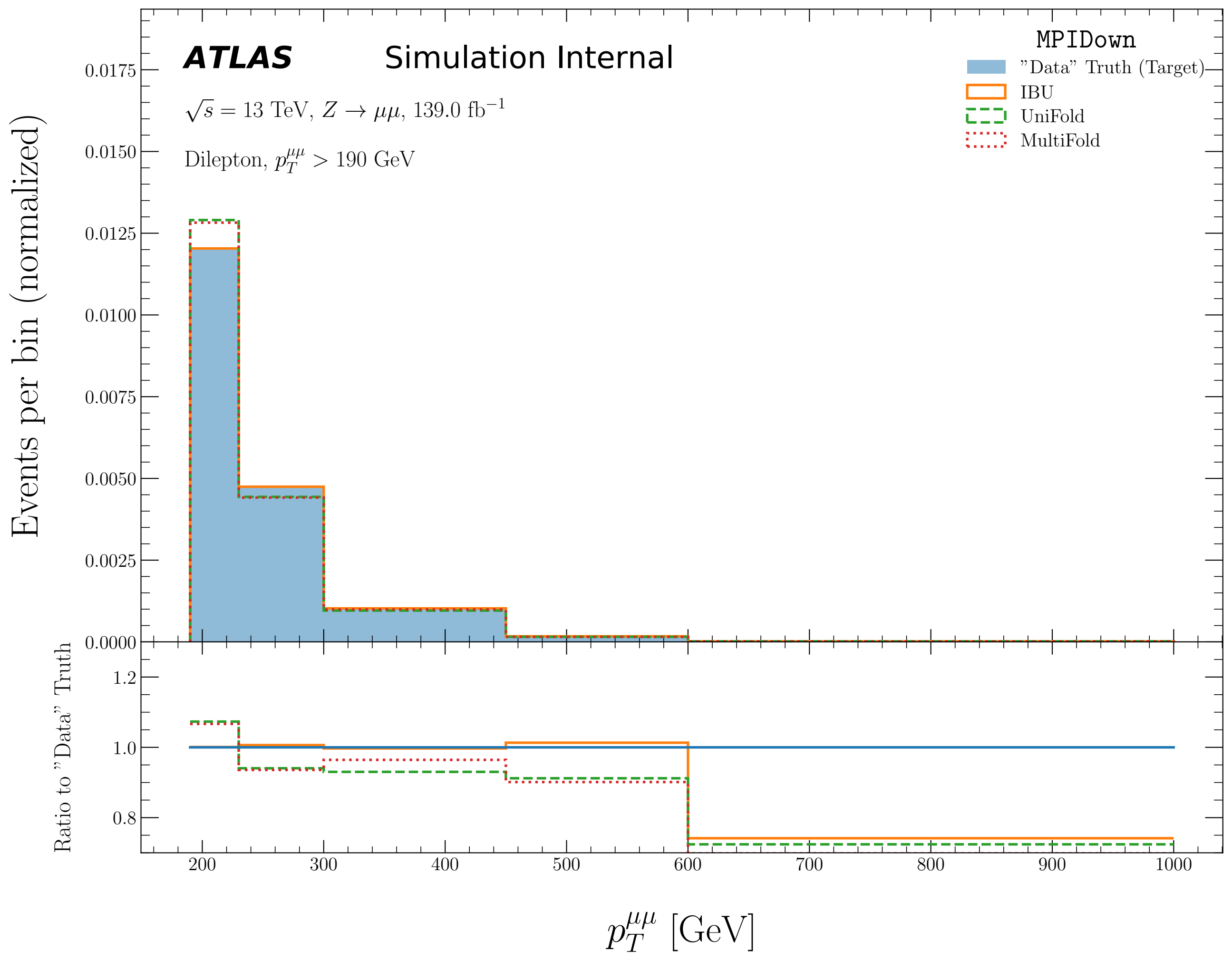


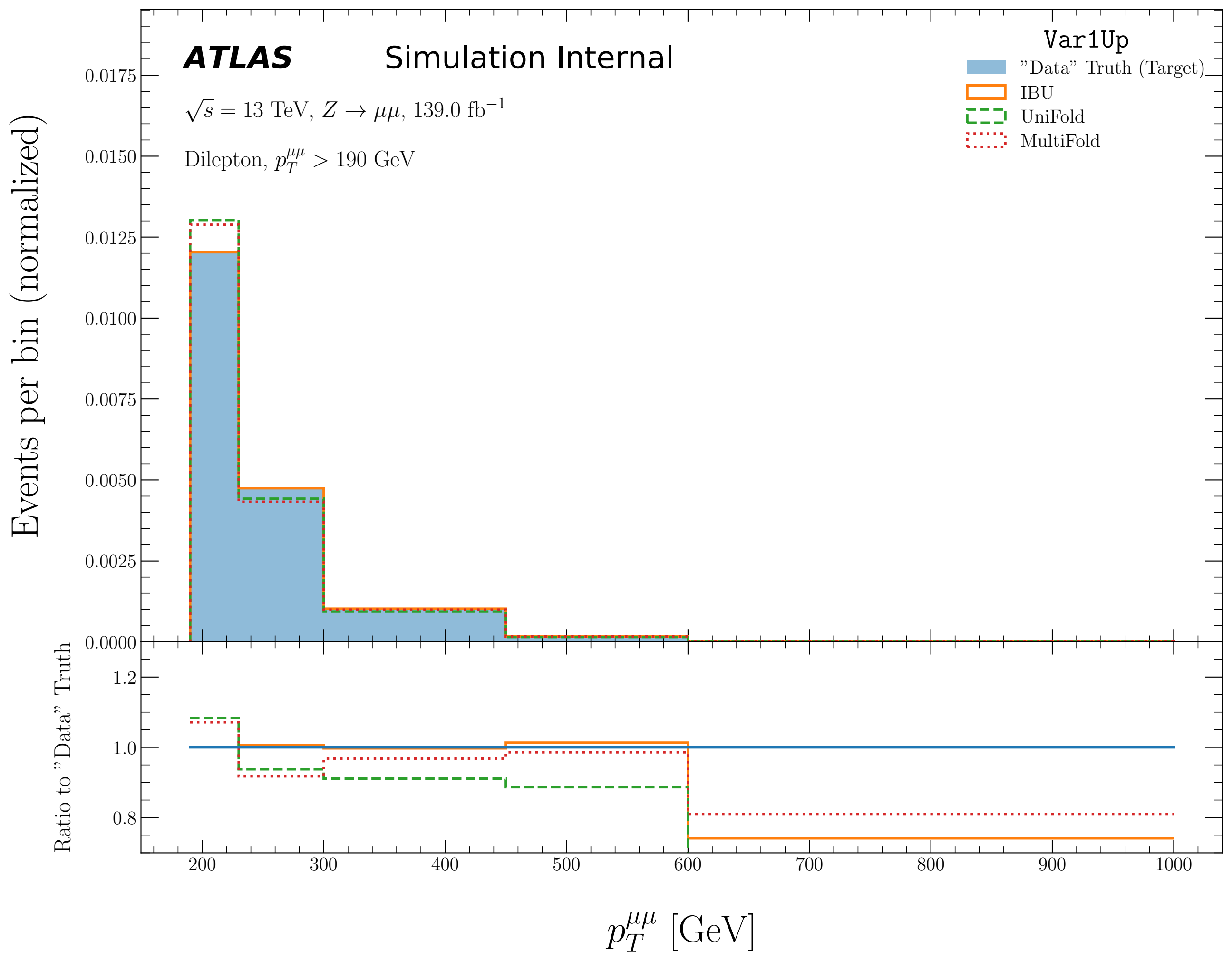


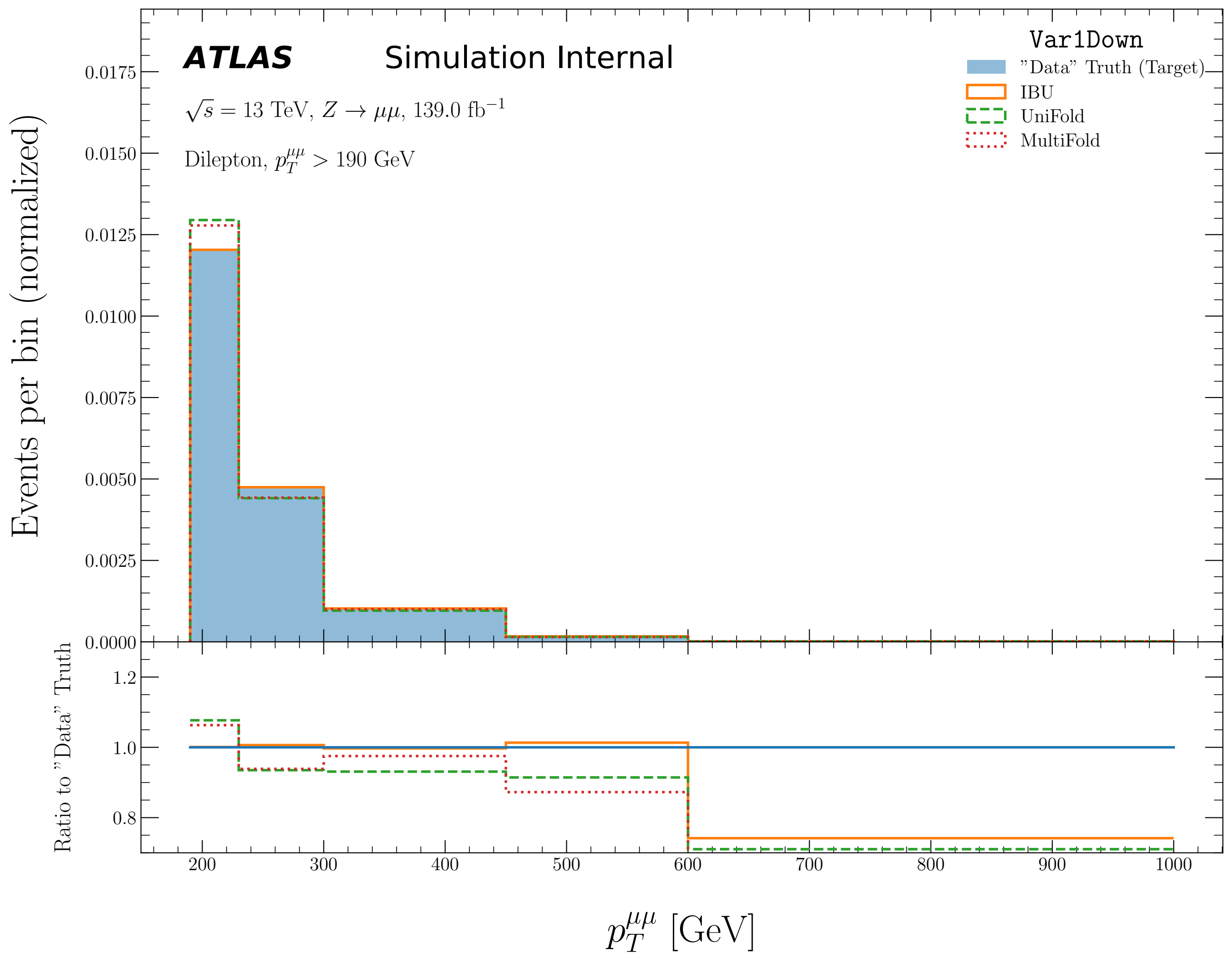


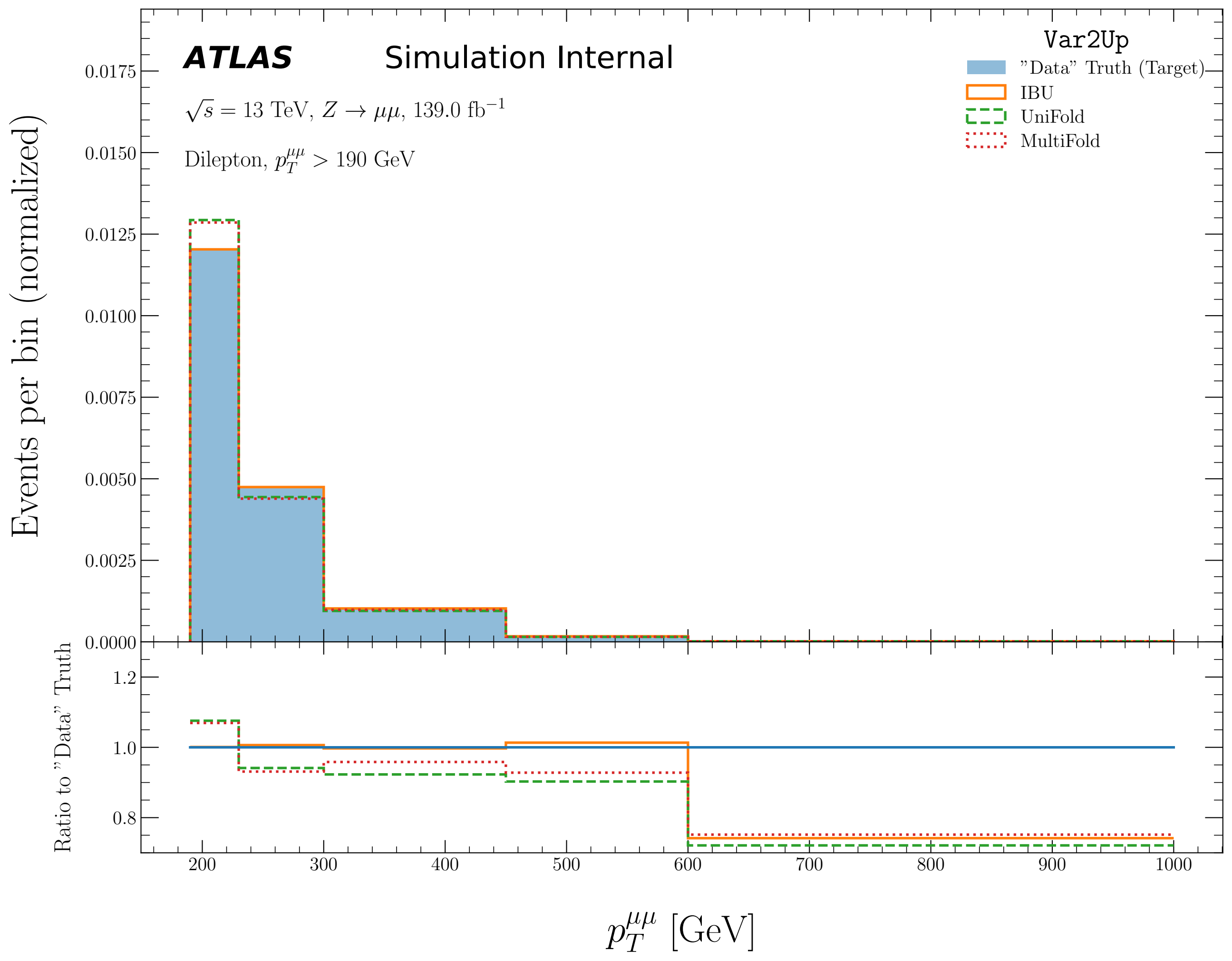


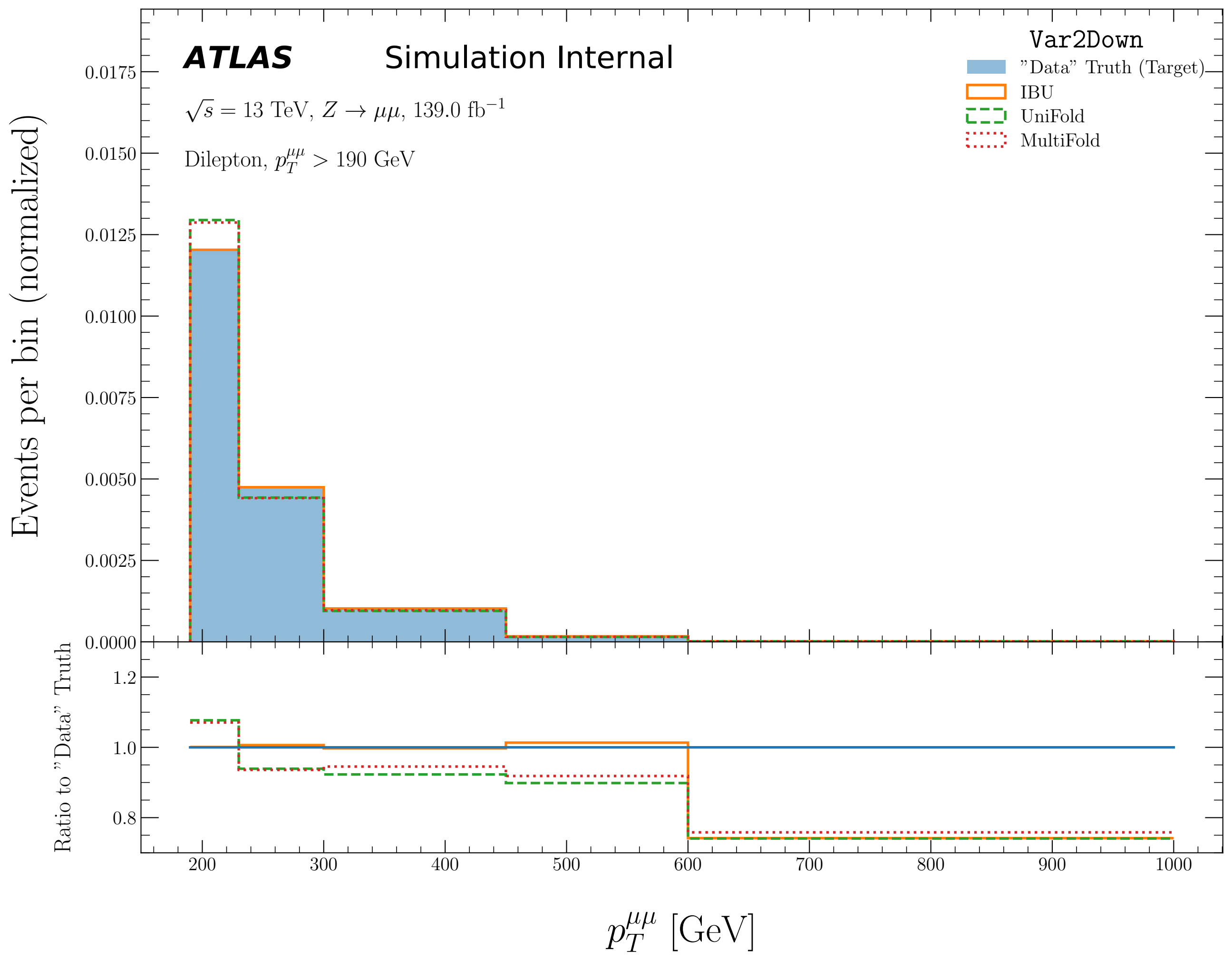




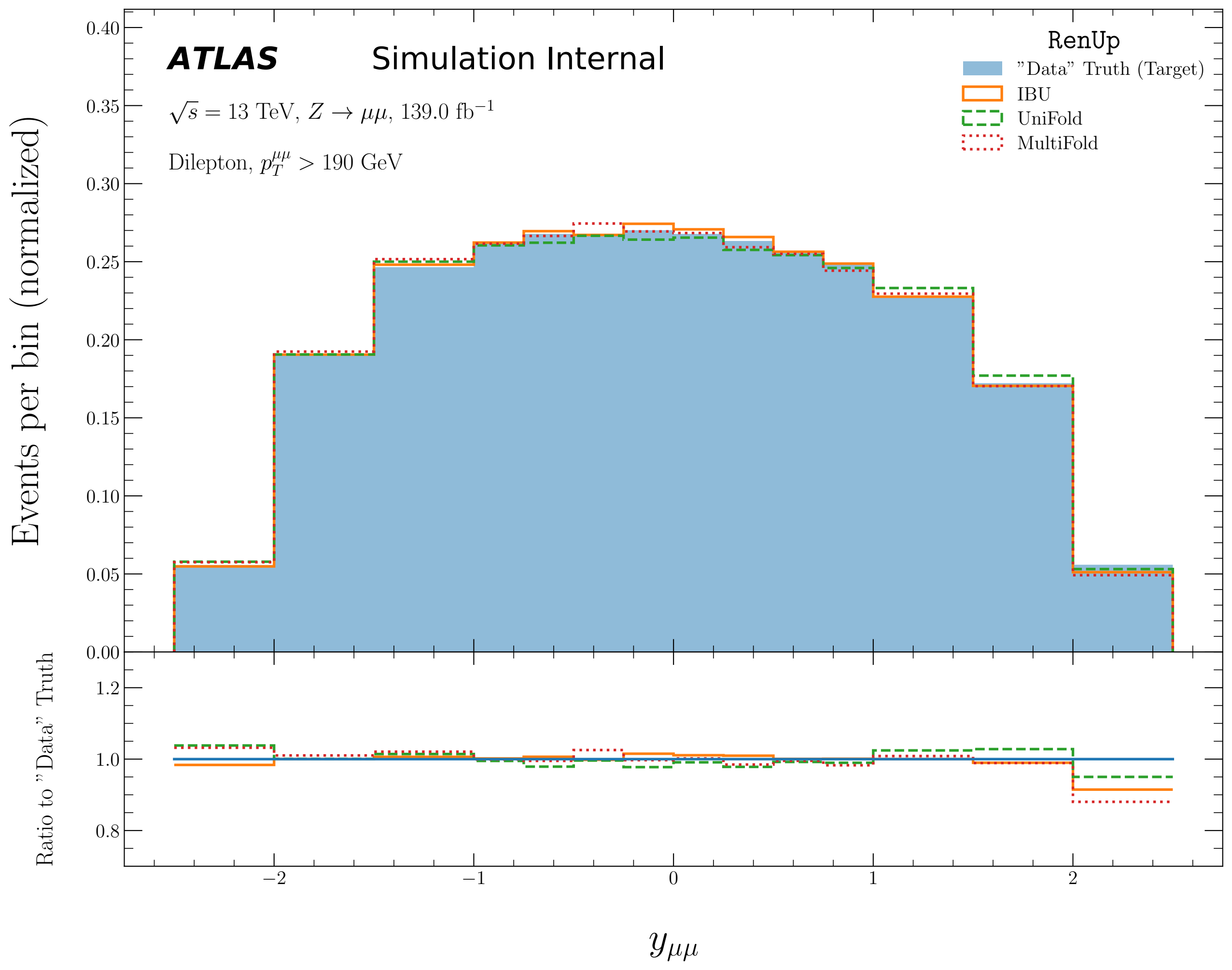


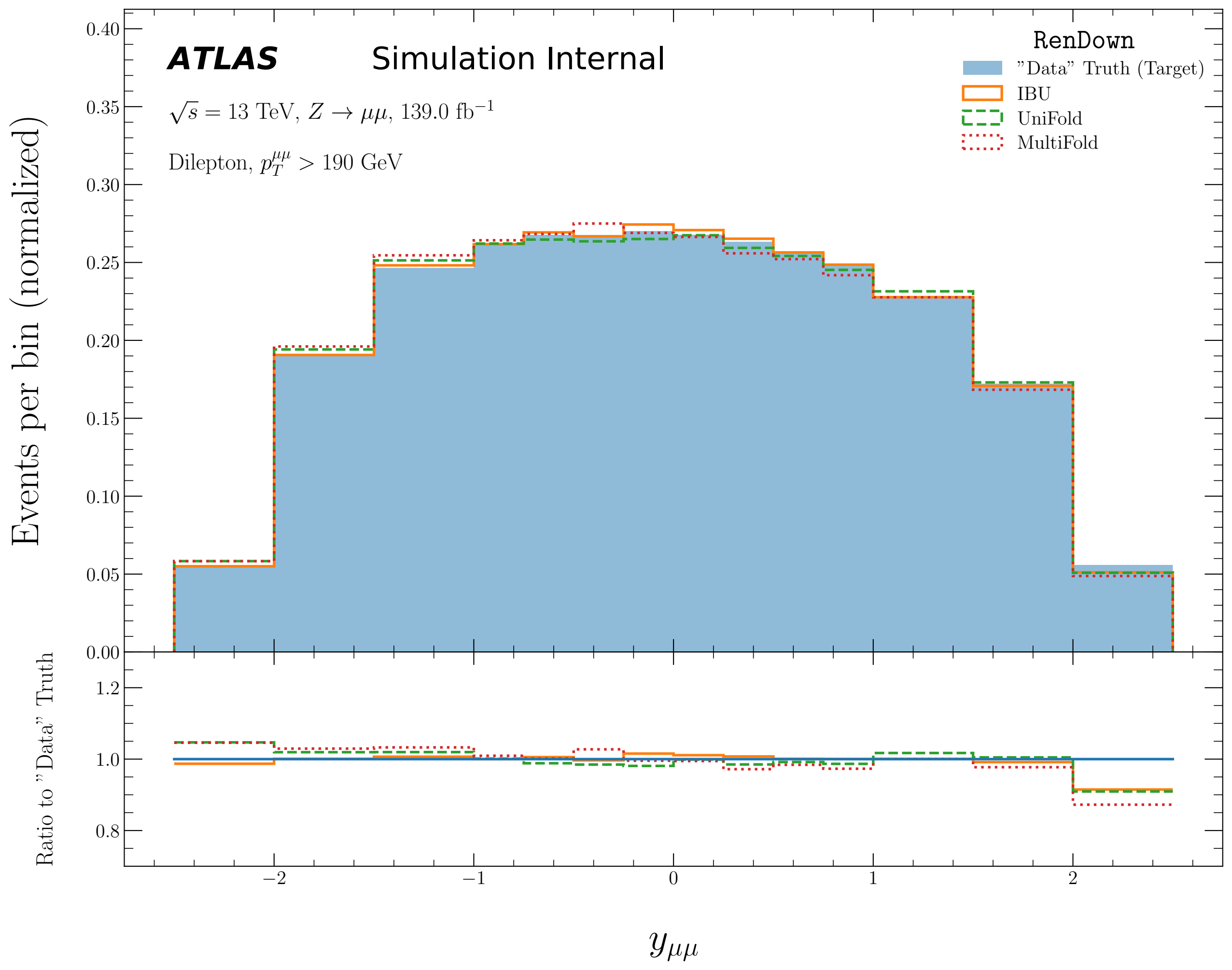












Events per bin (normalized)

**ATLAS**

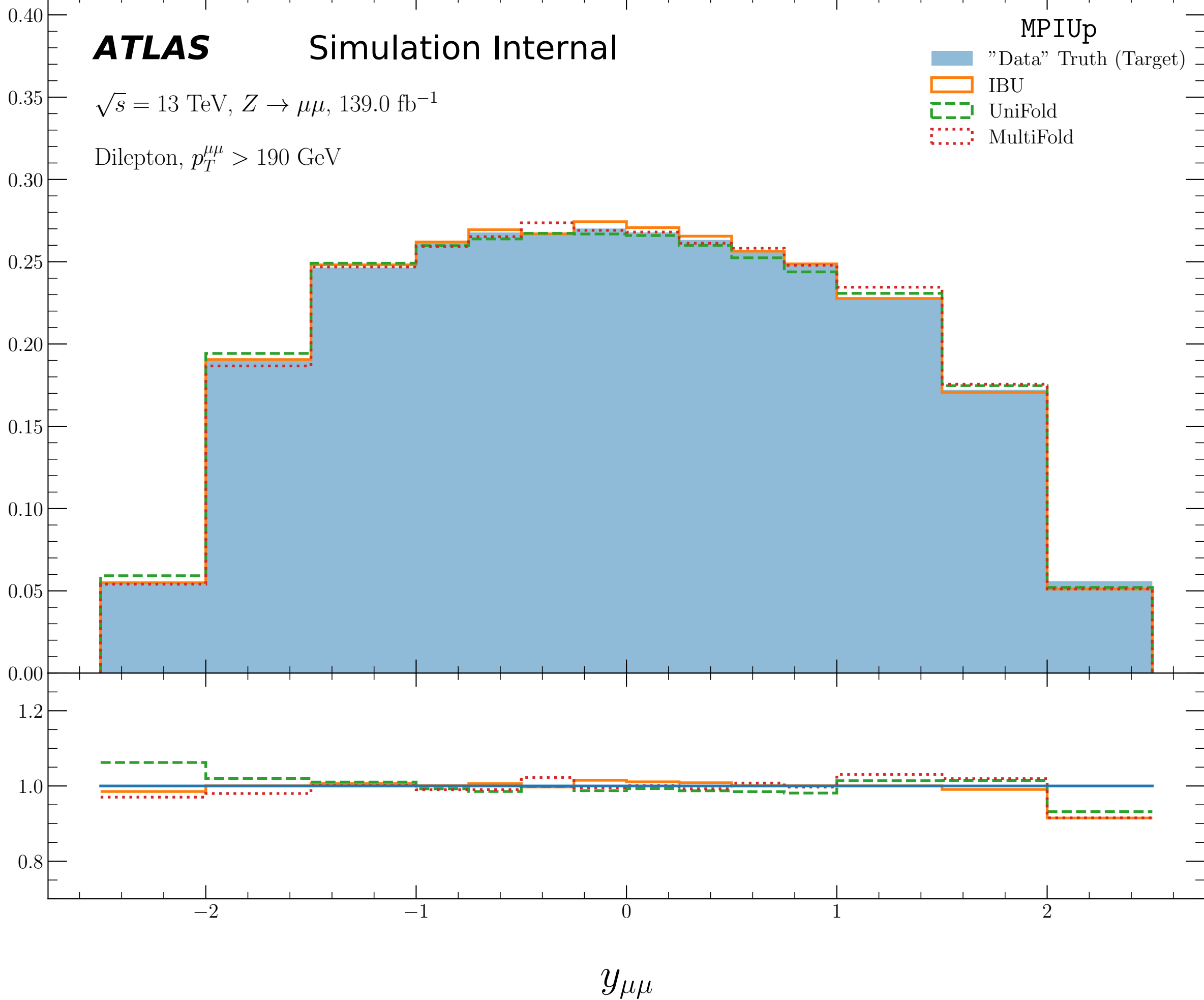
Simulation Internal

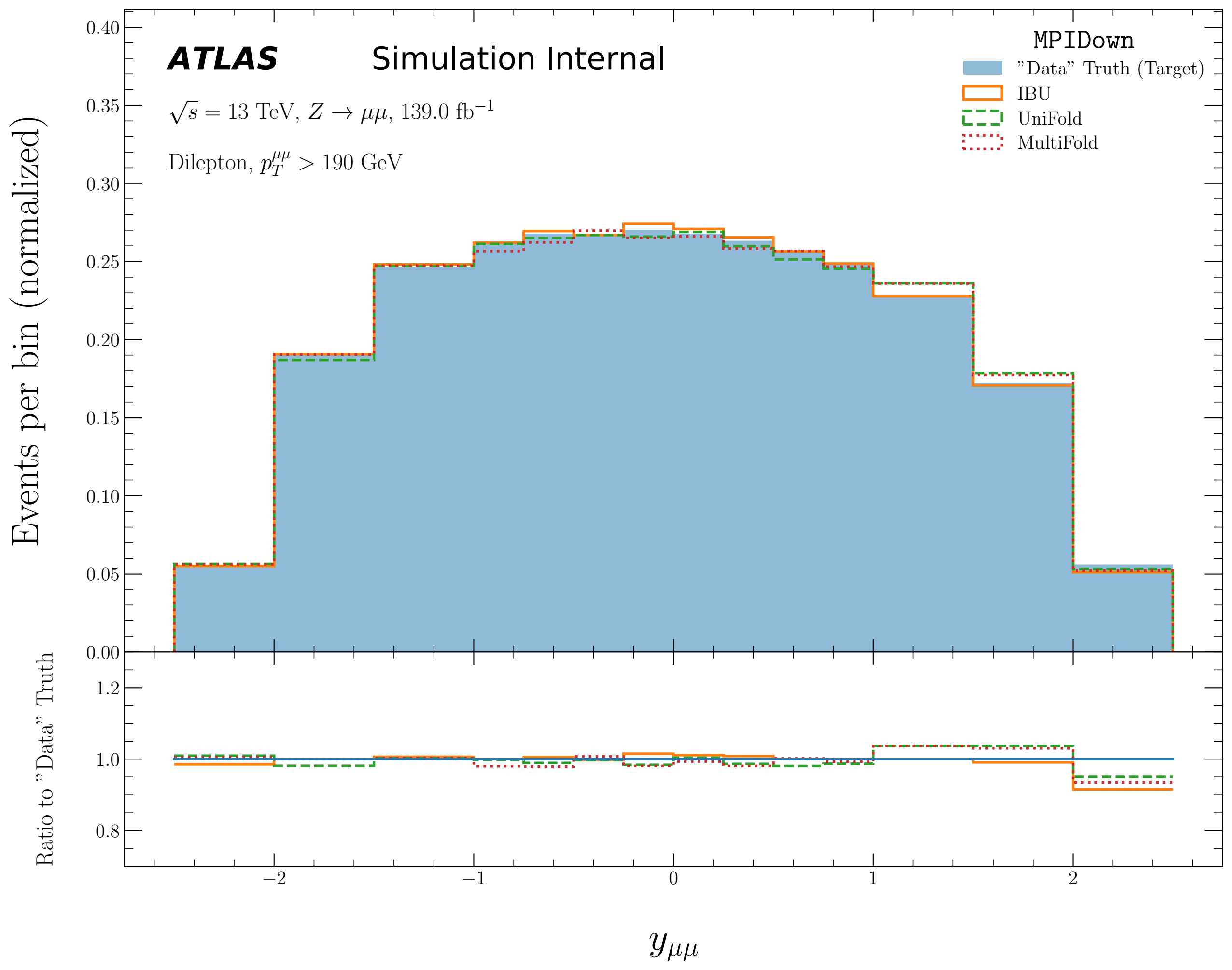
$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

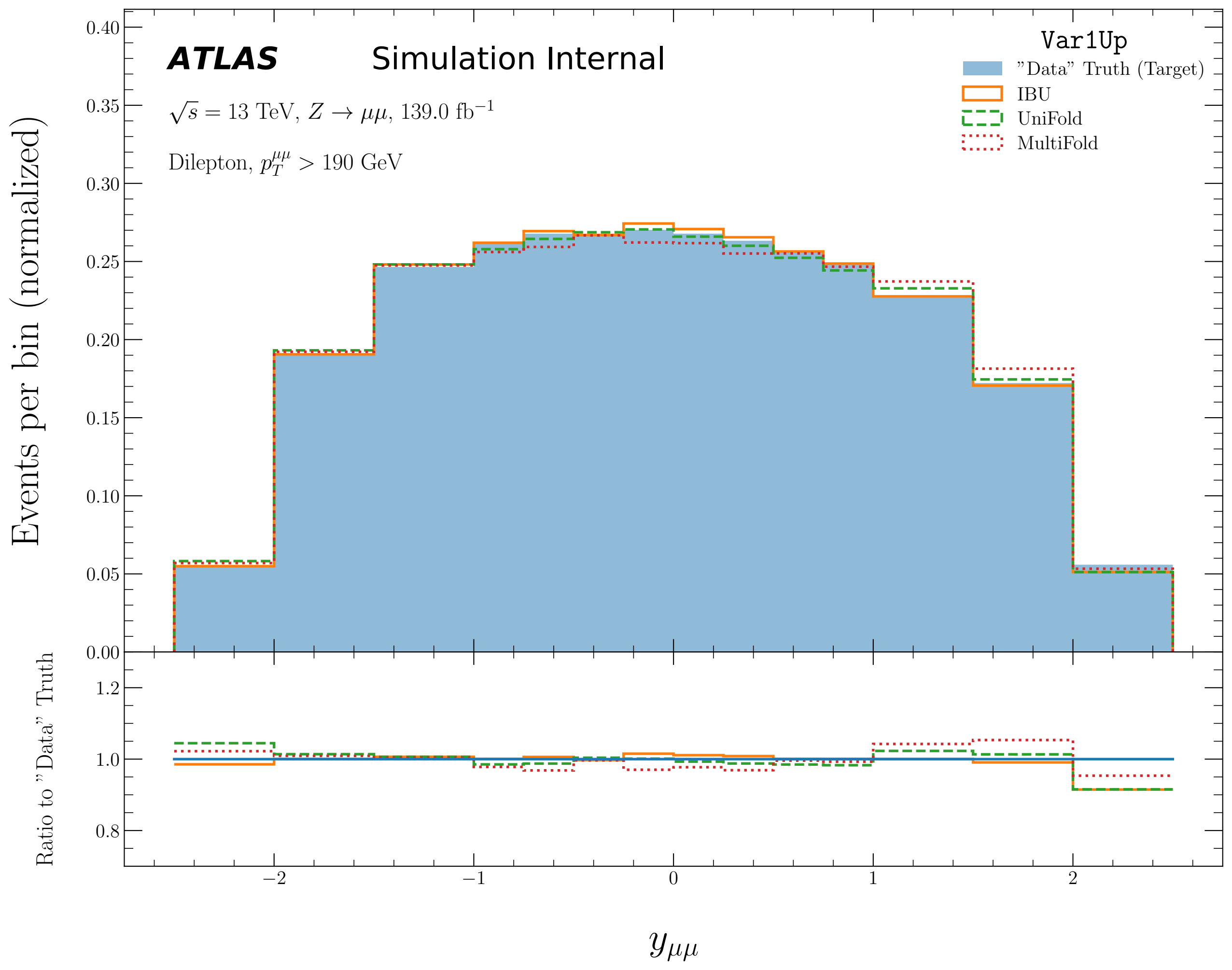
Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

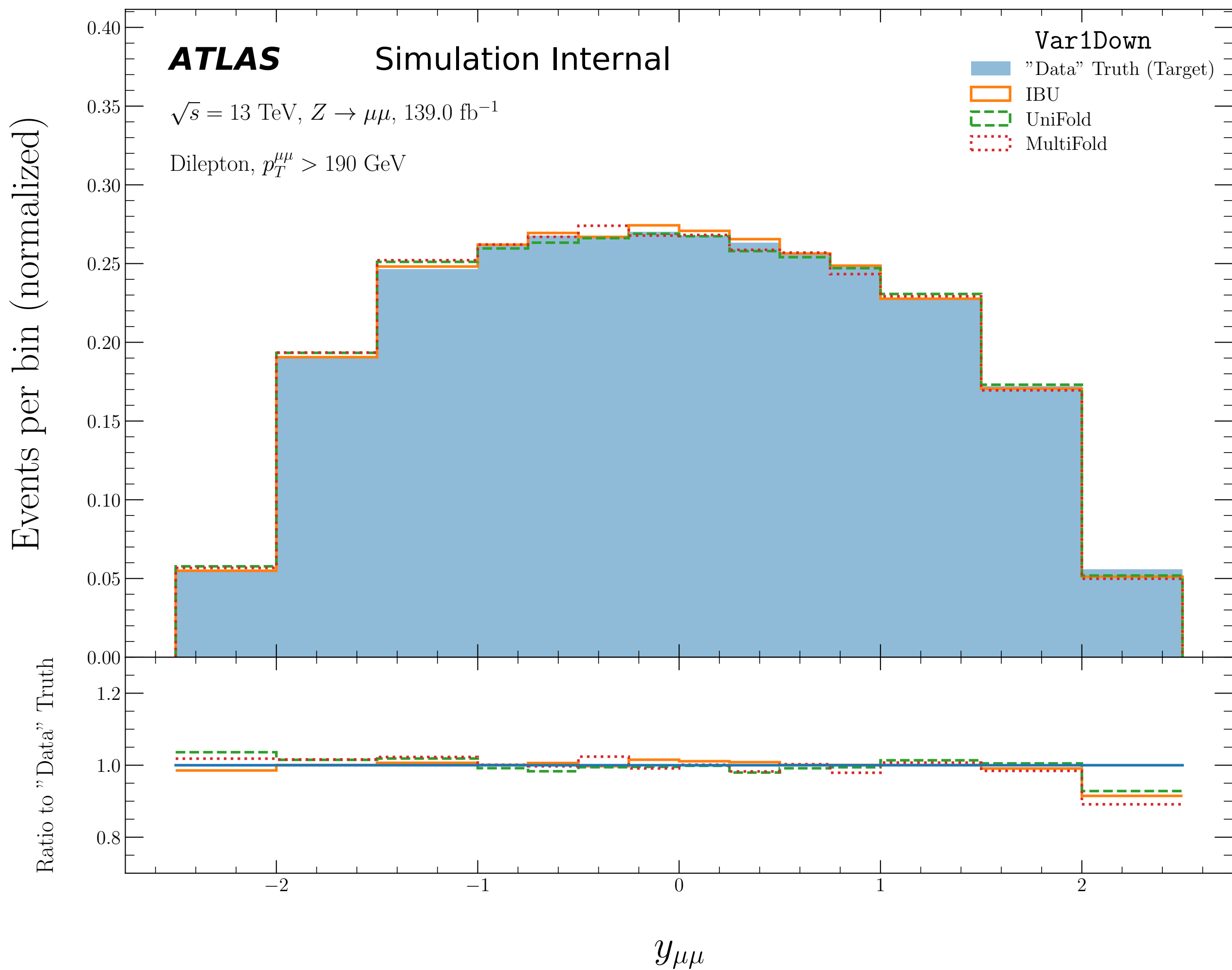
MPIUp

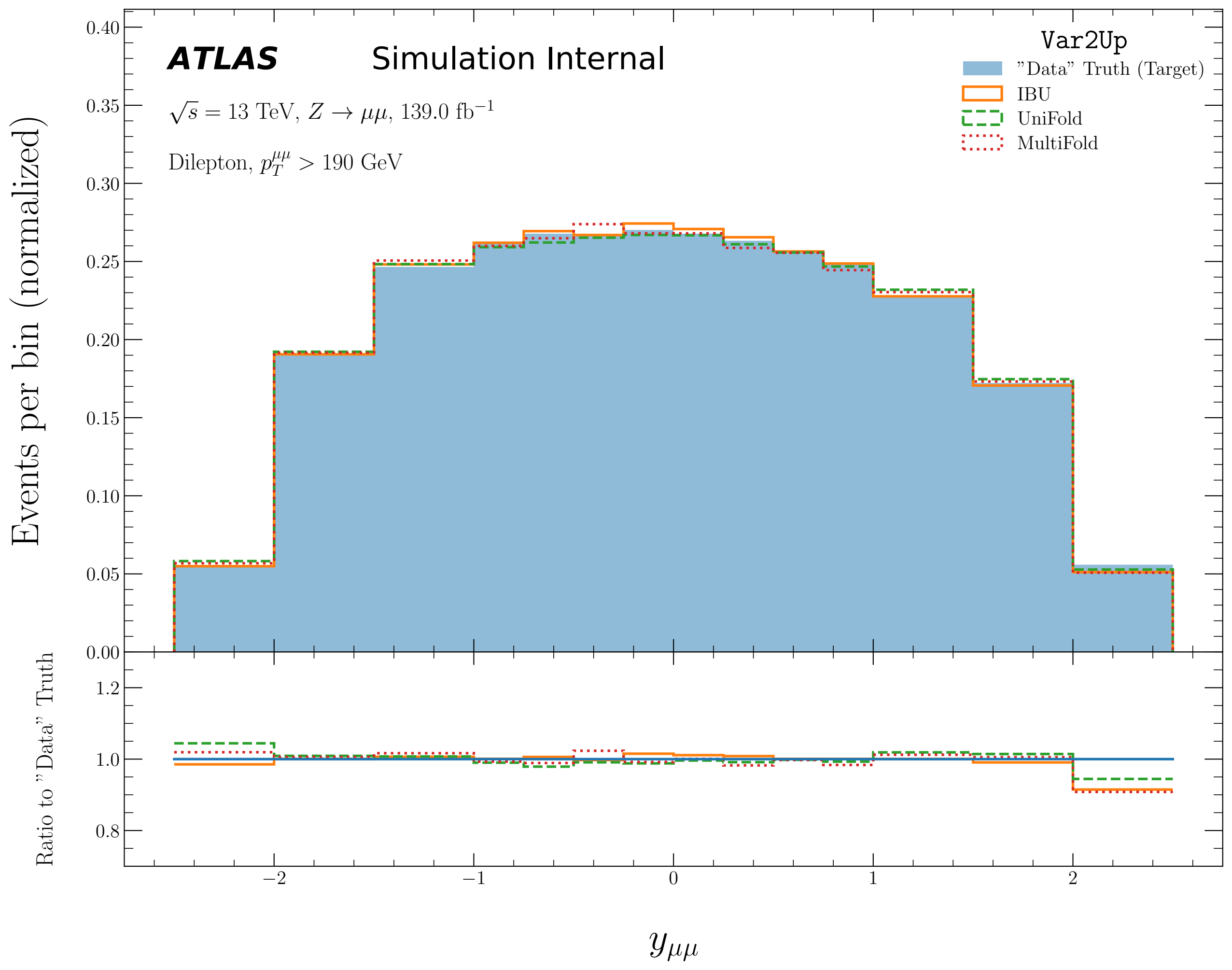
- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

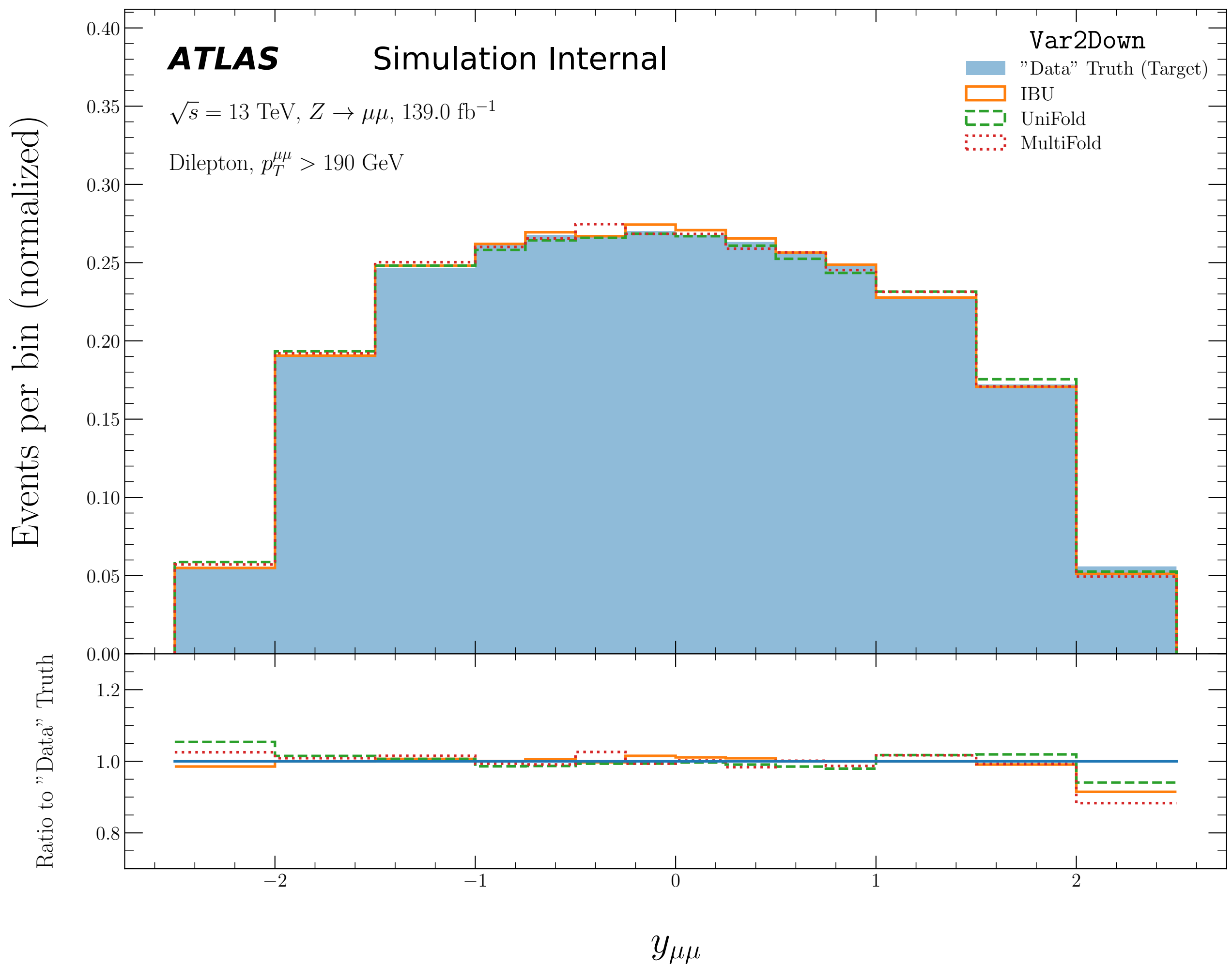




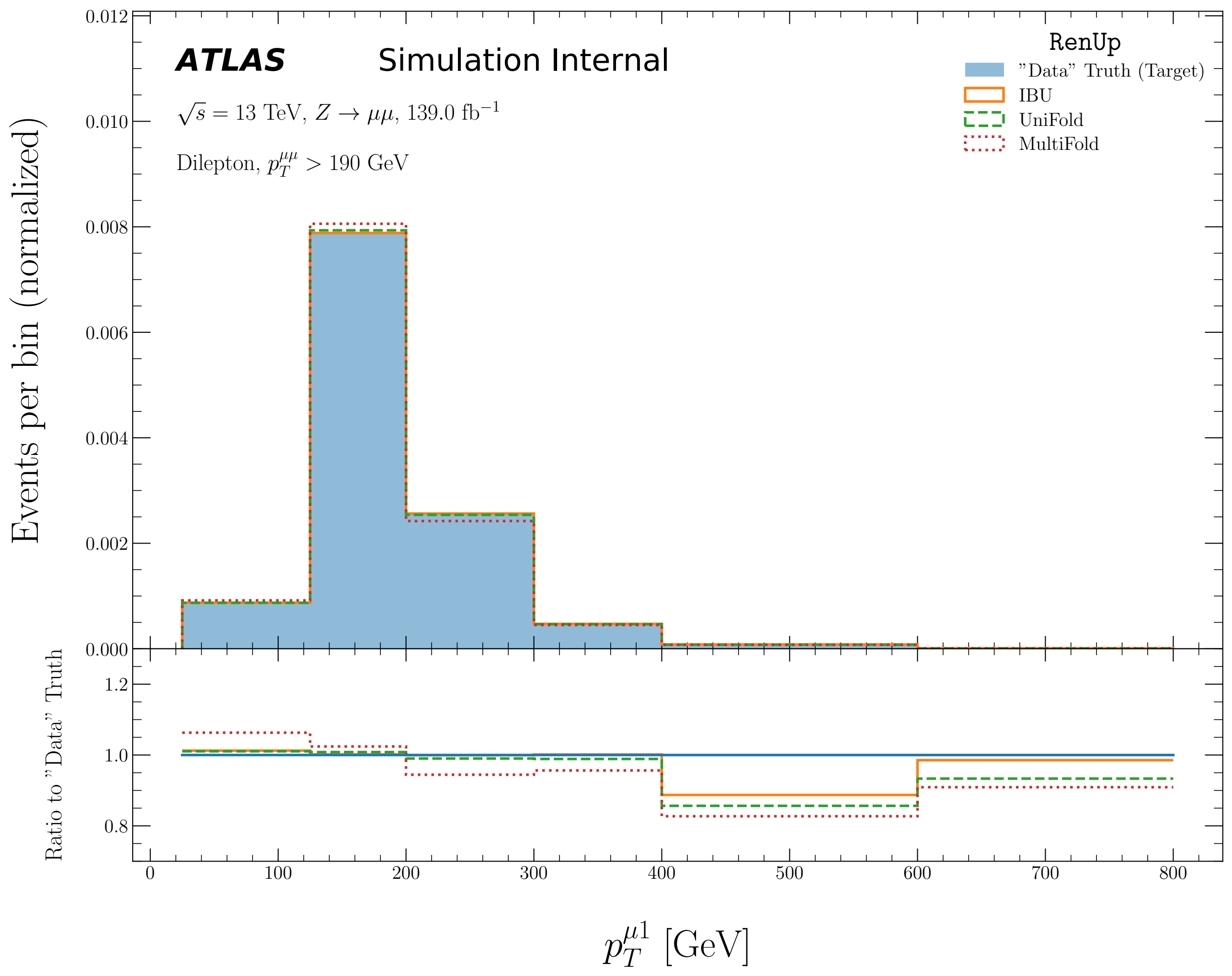


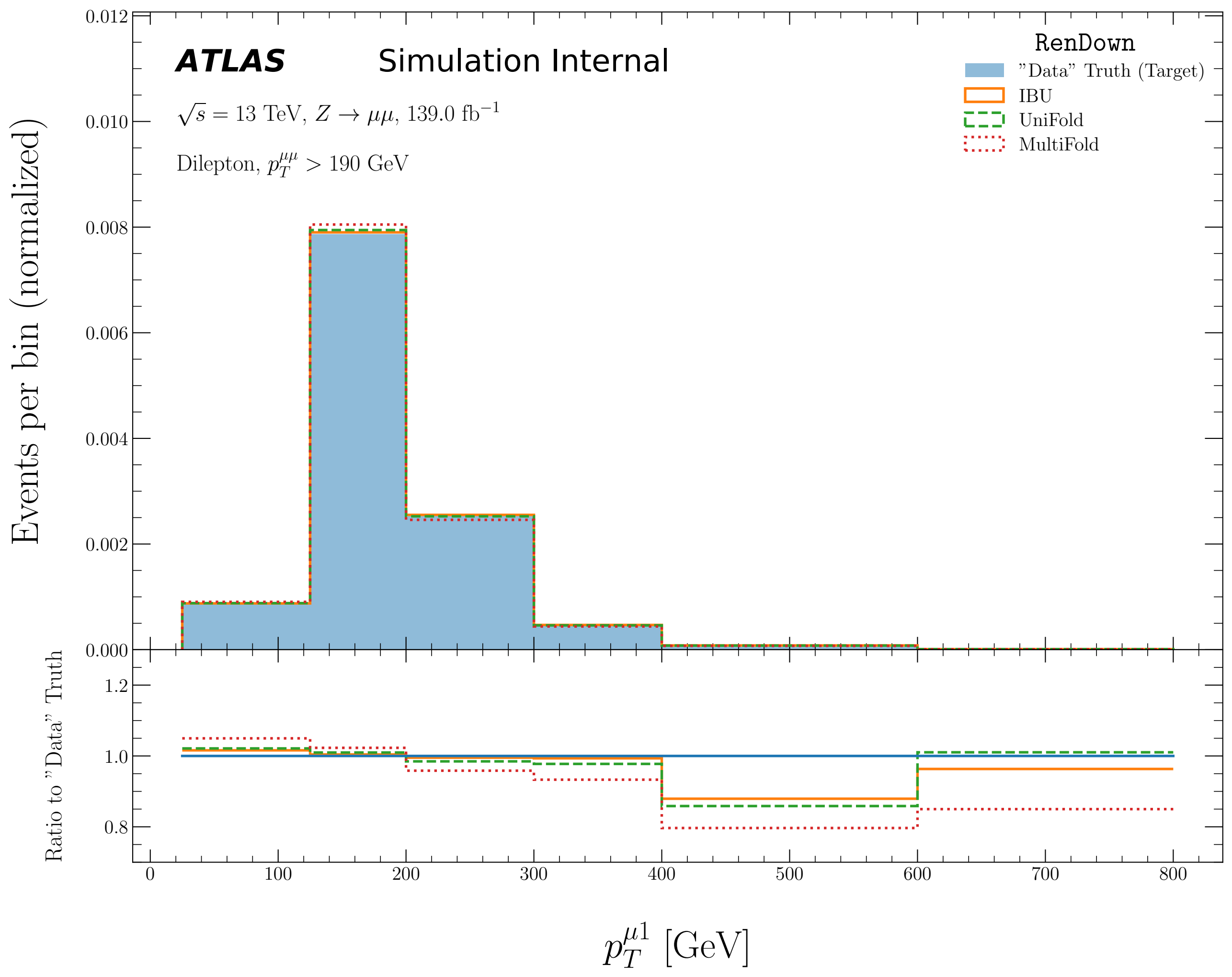


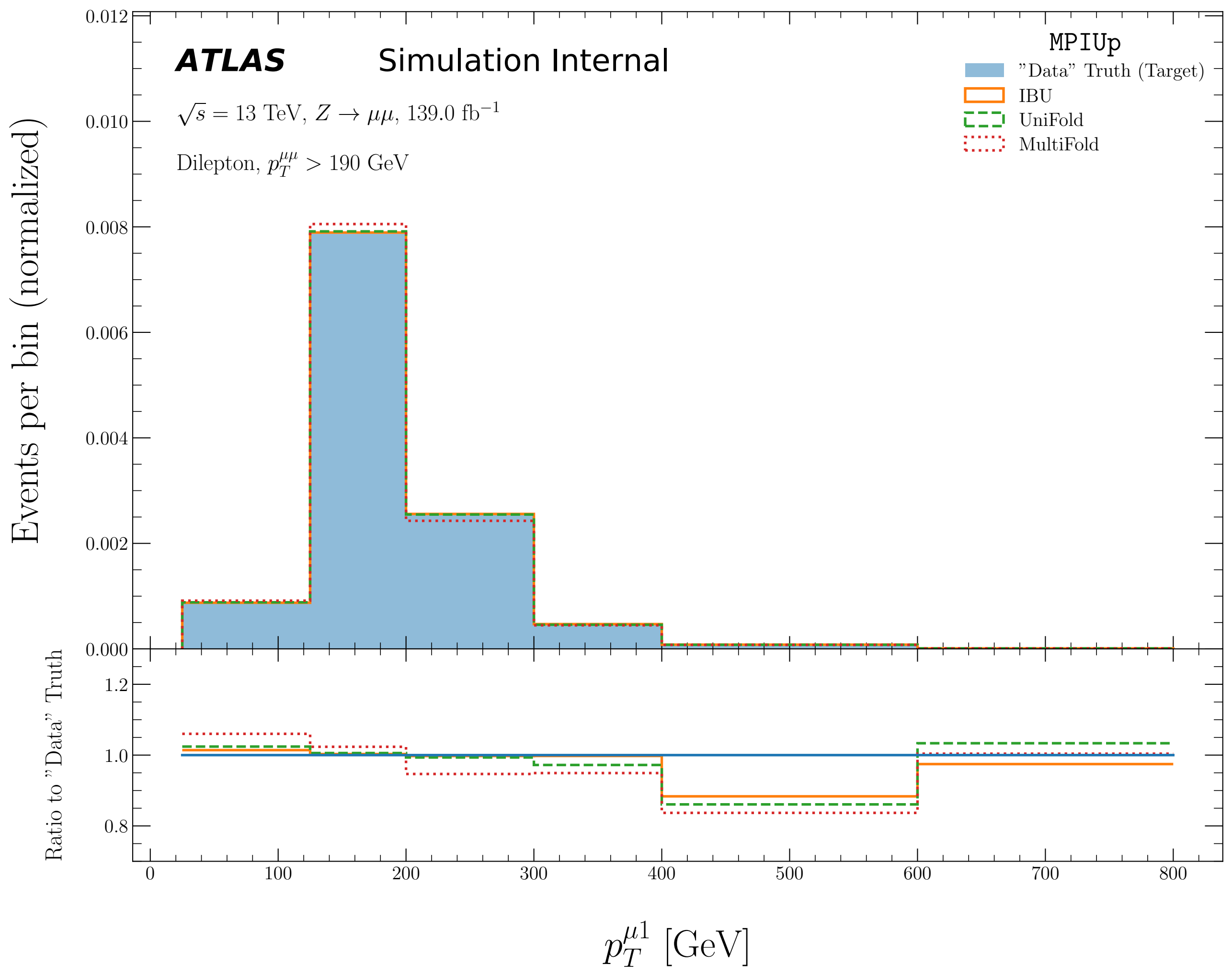


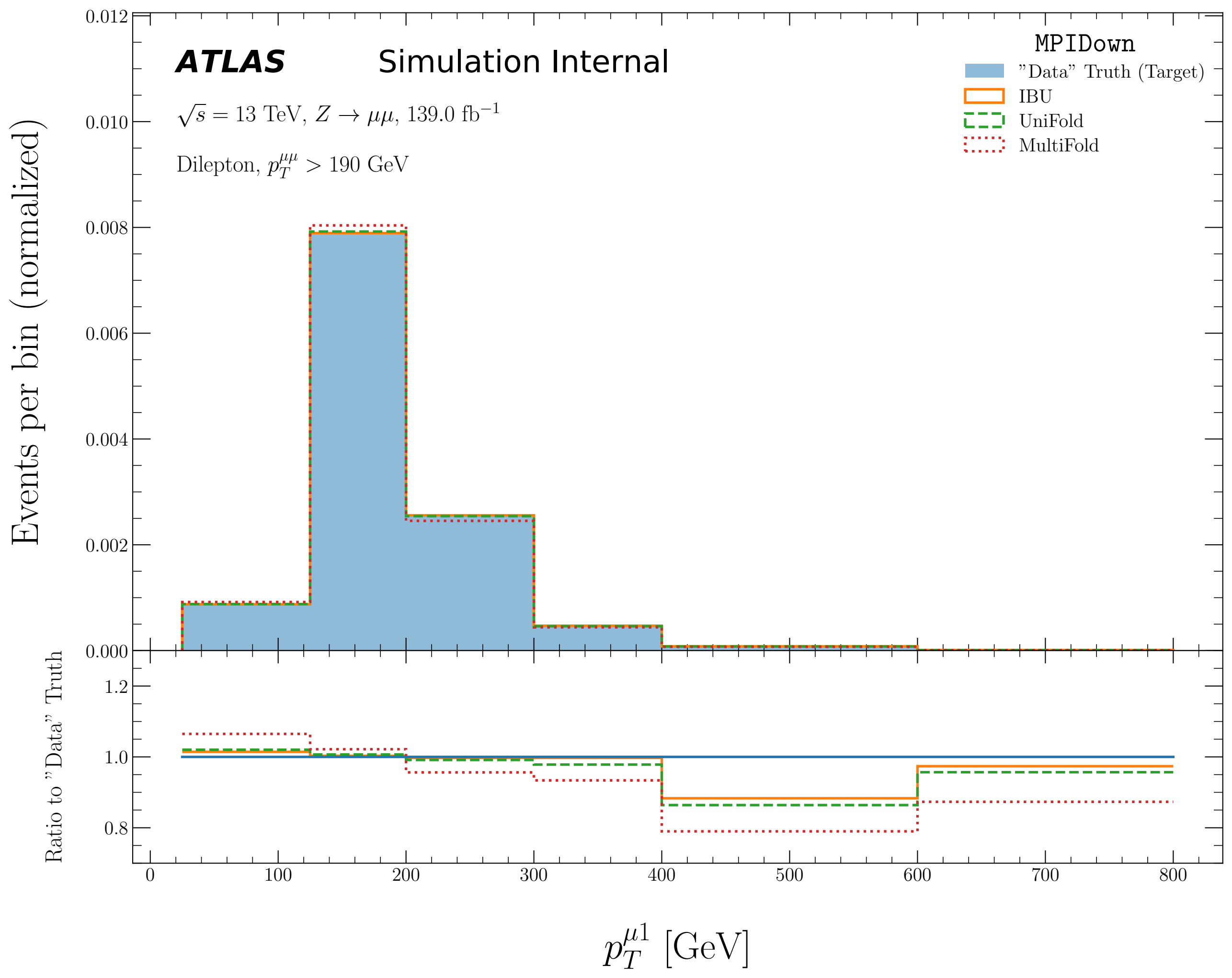


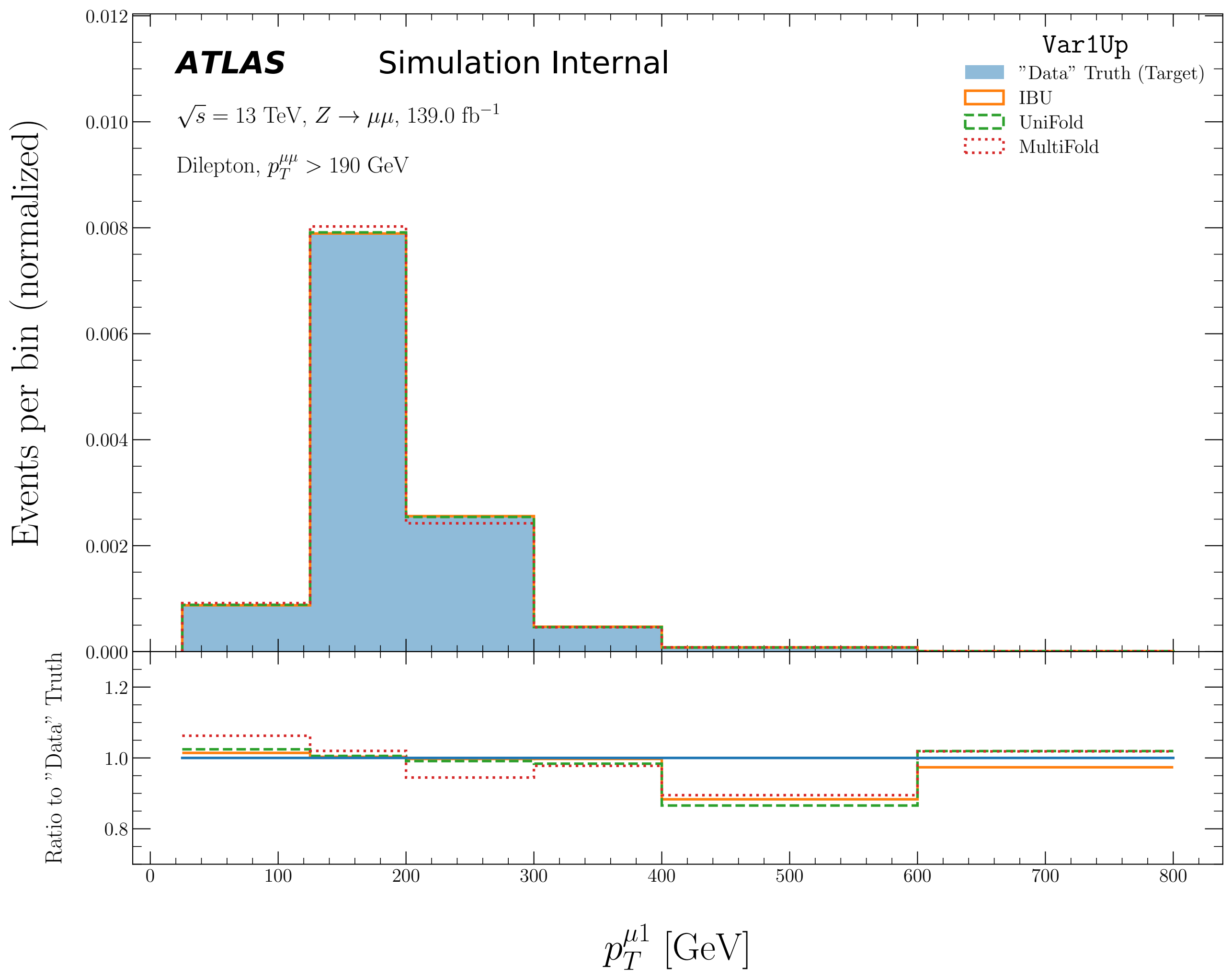


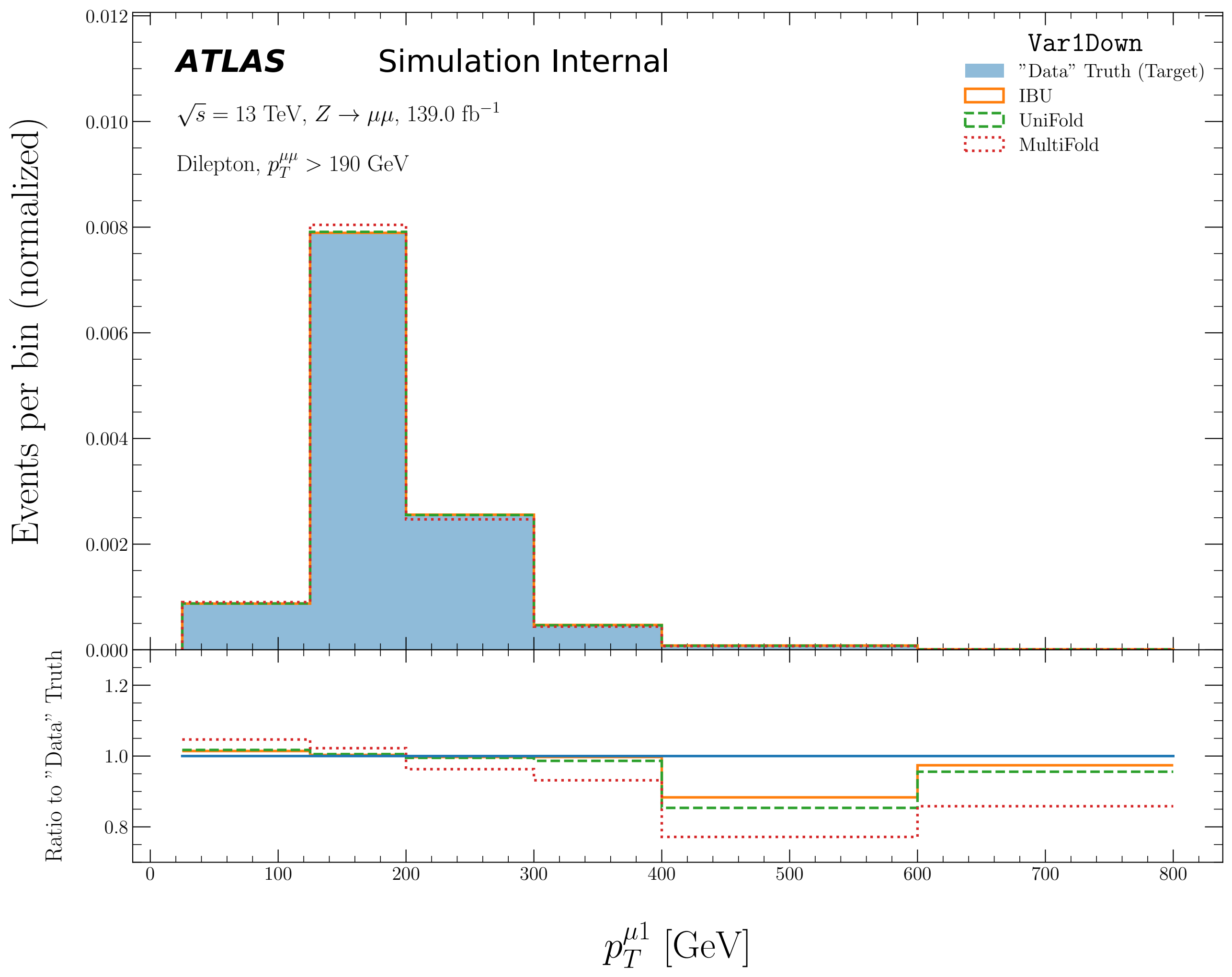


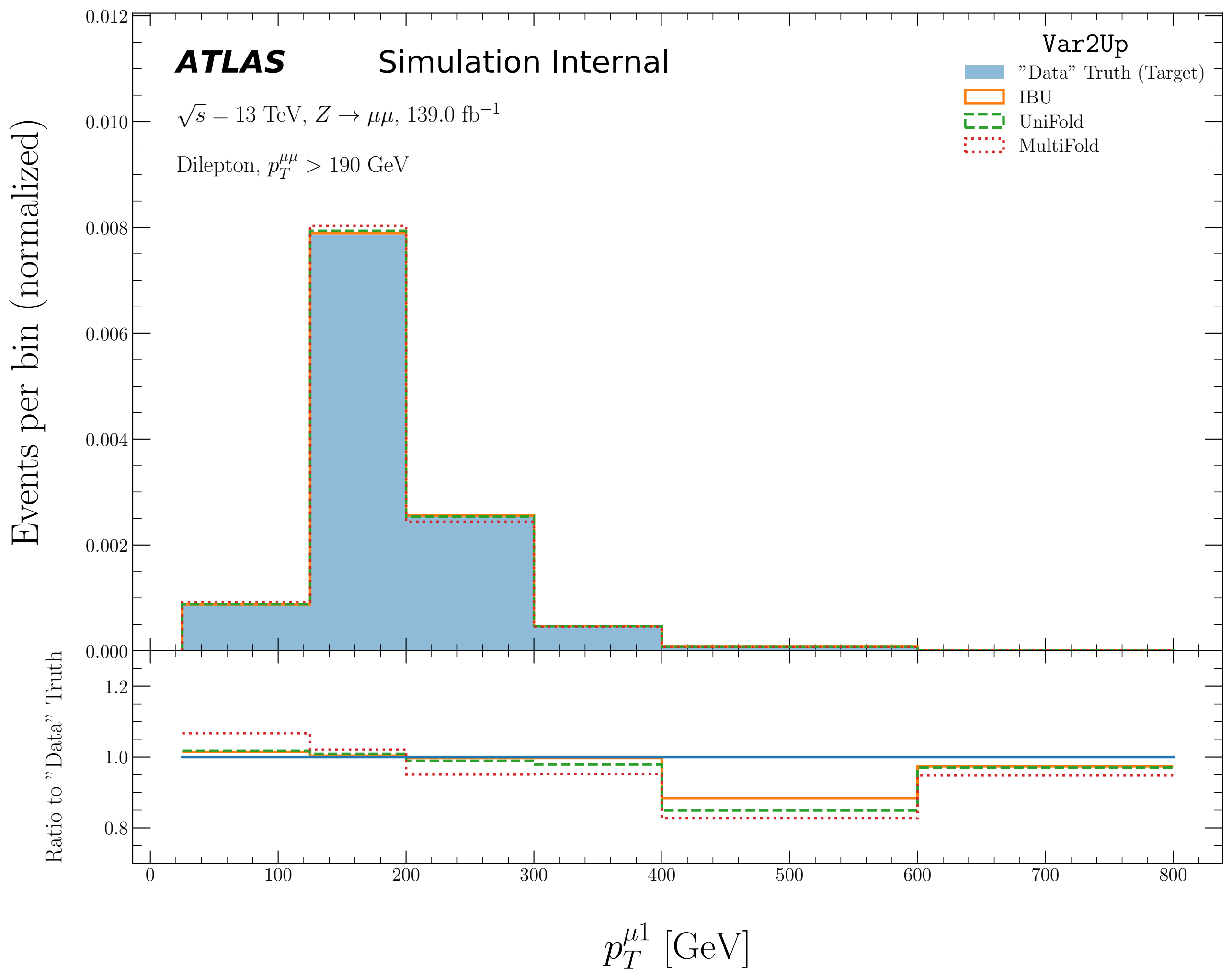


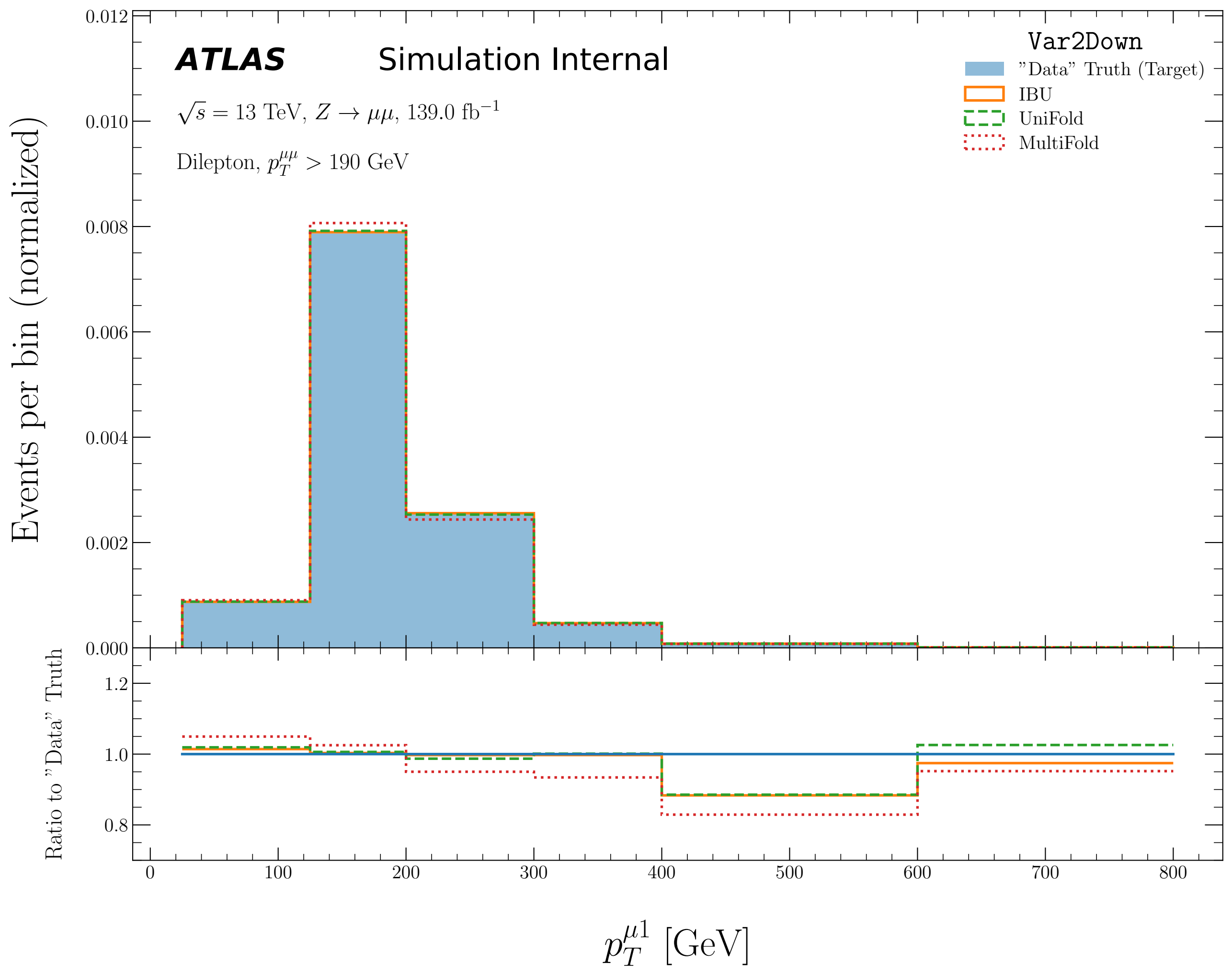




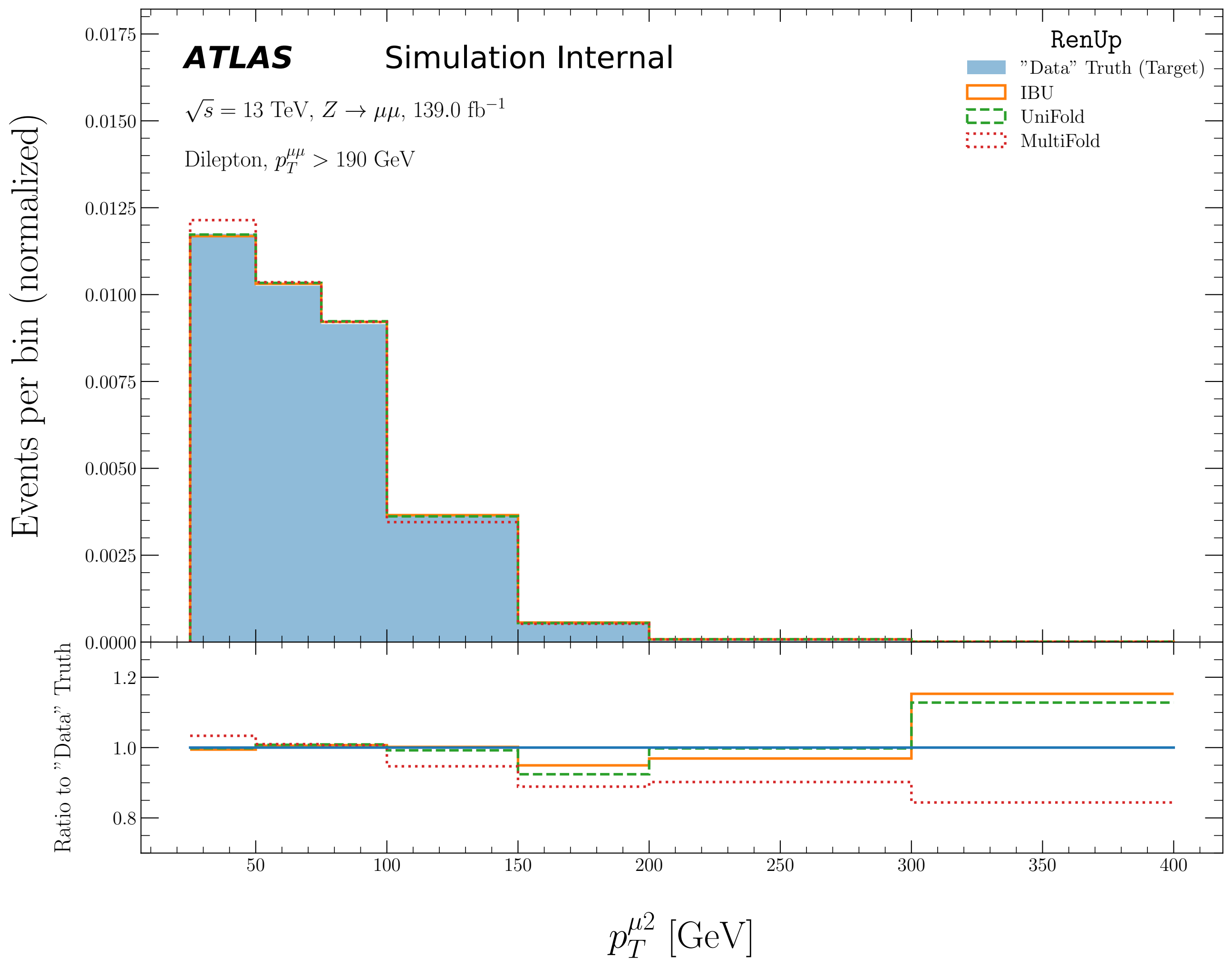


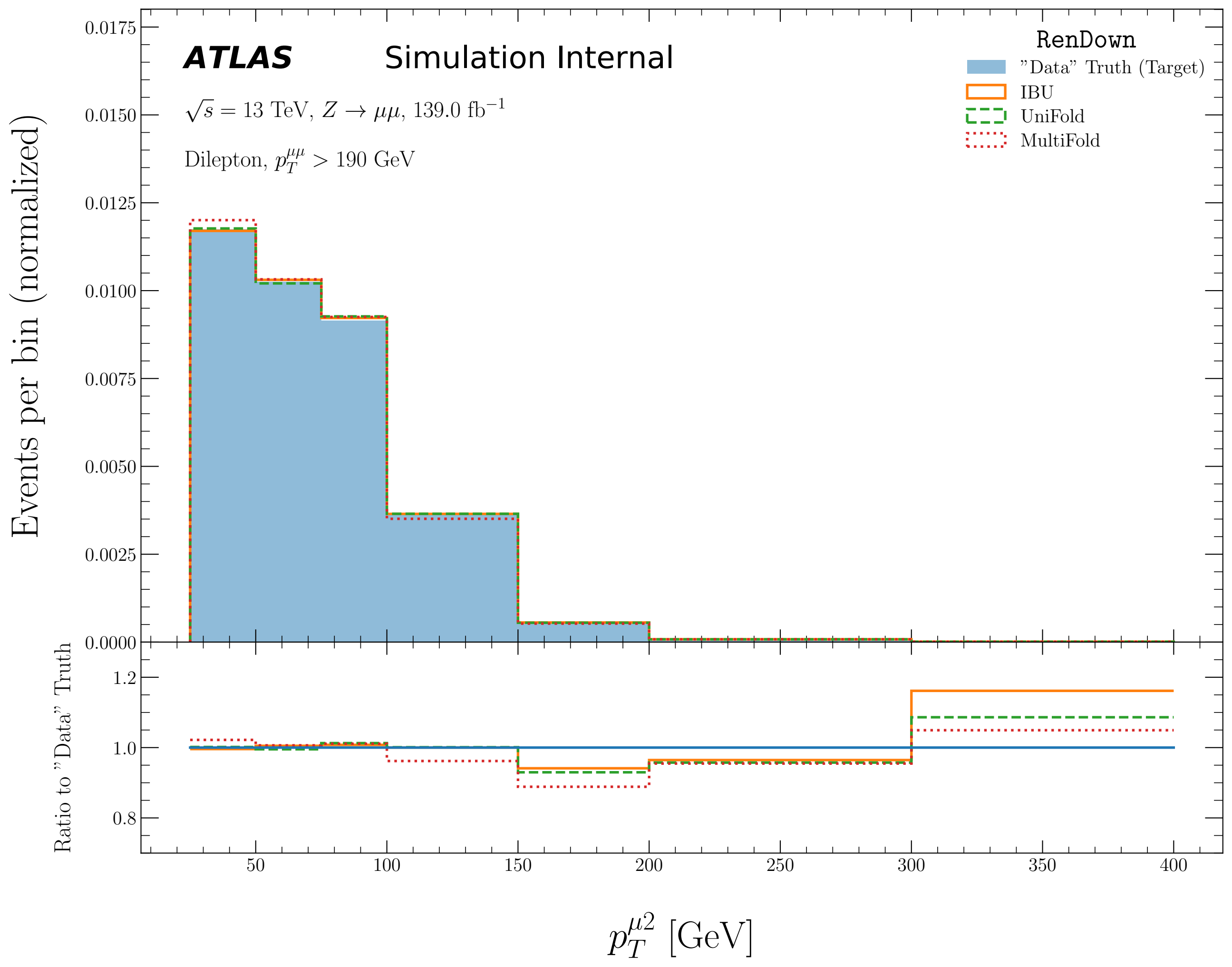


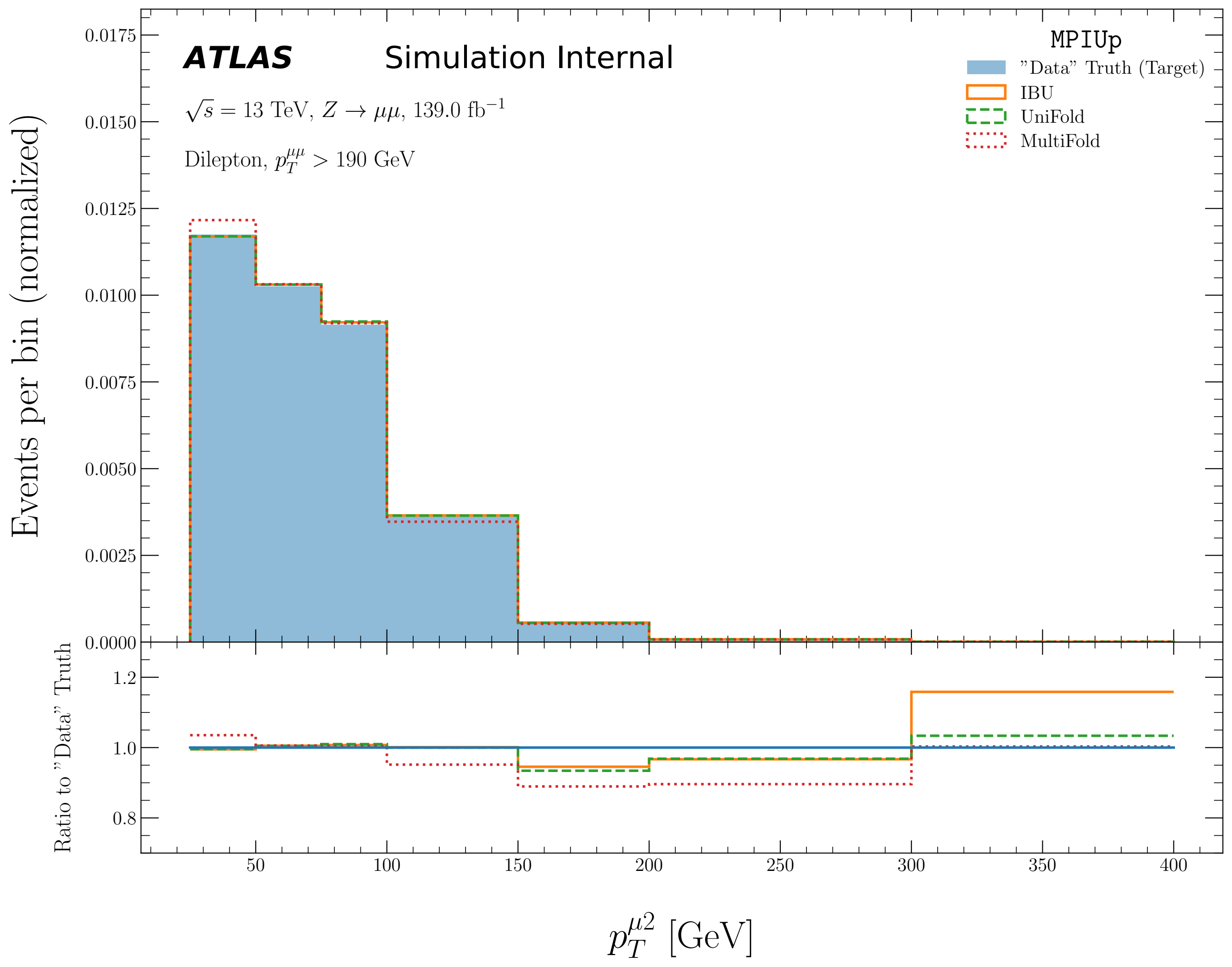


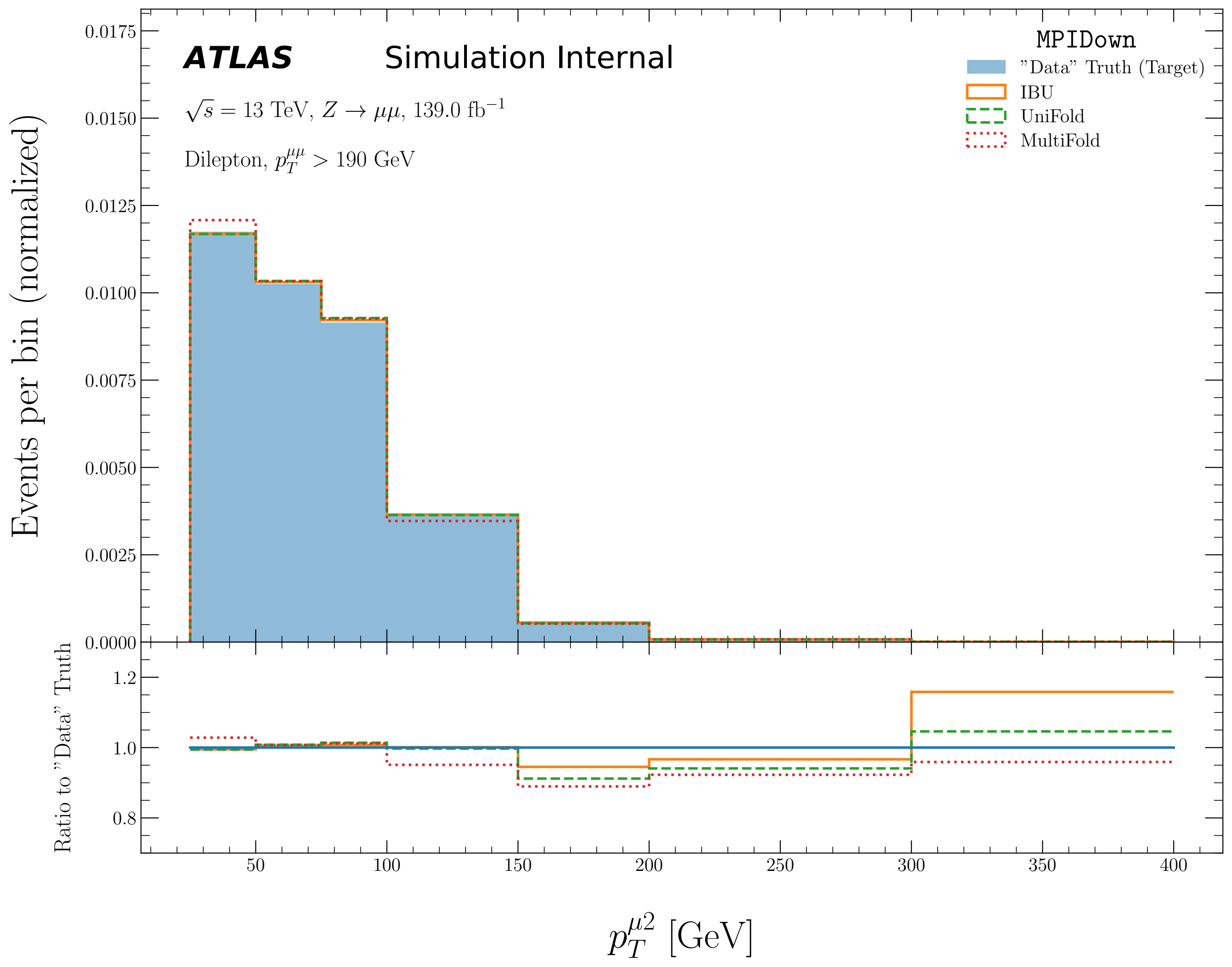


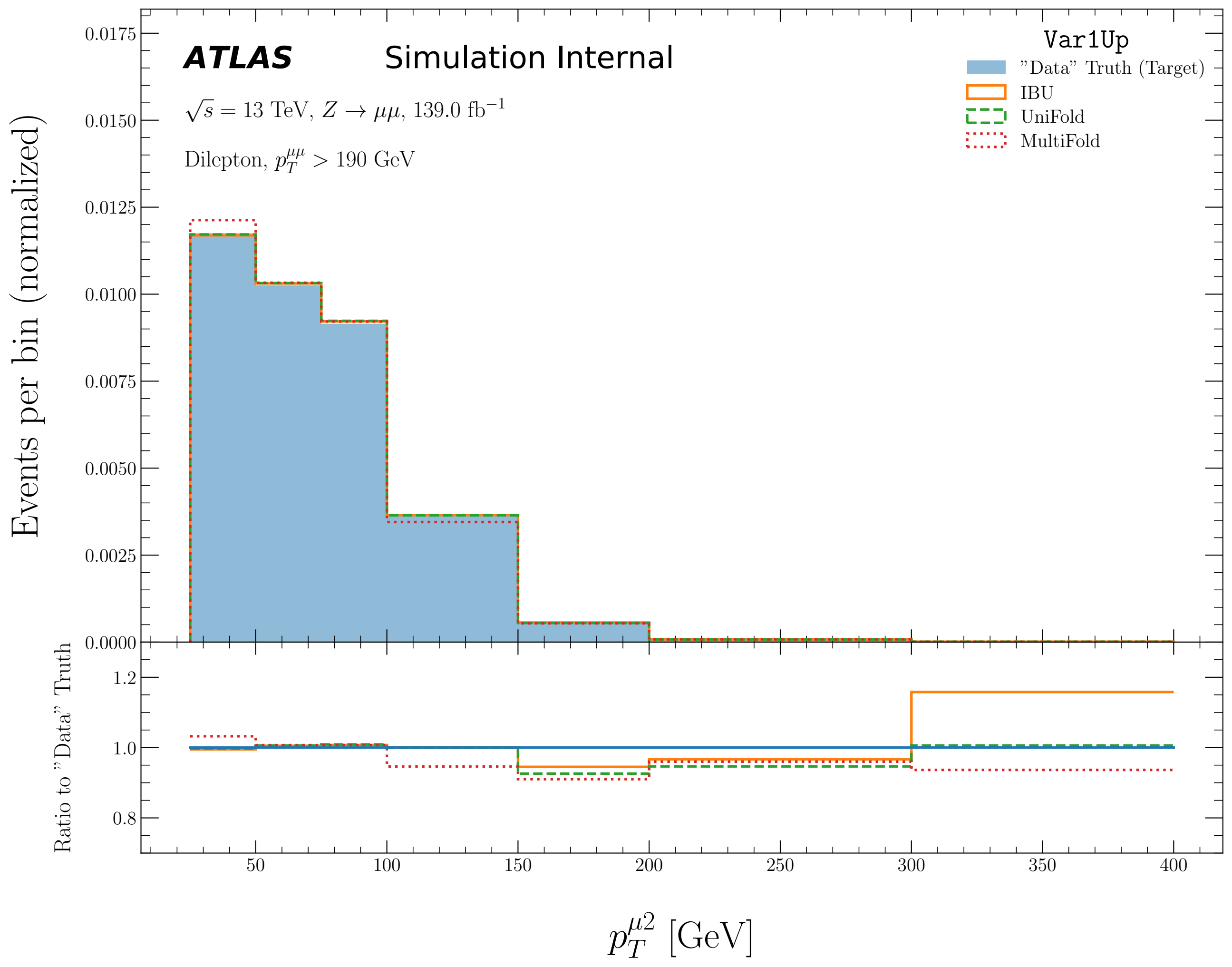


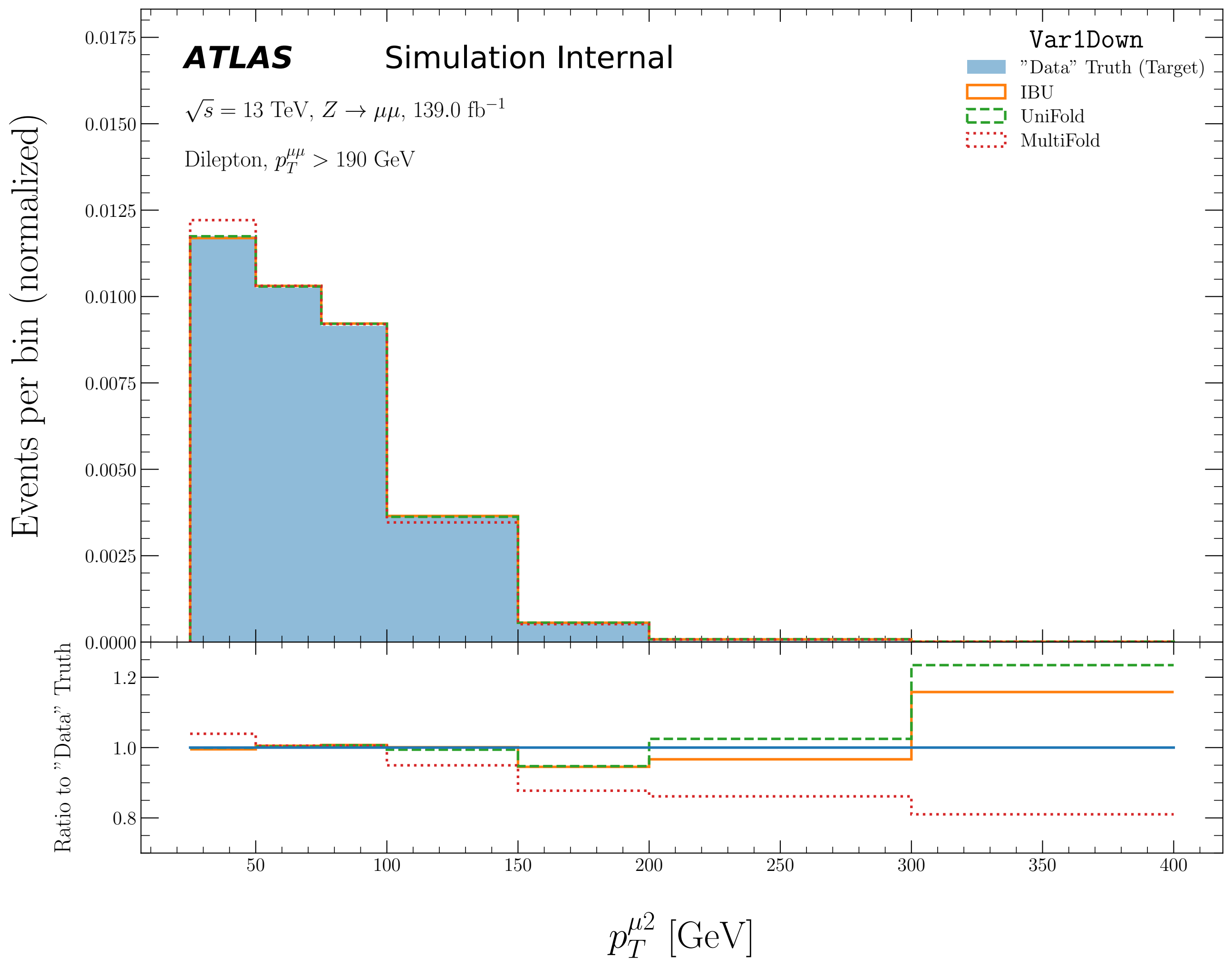


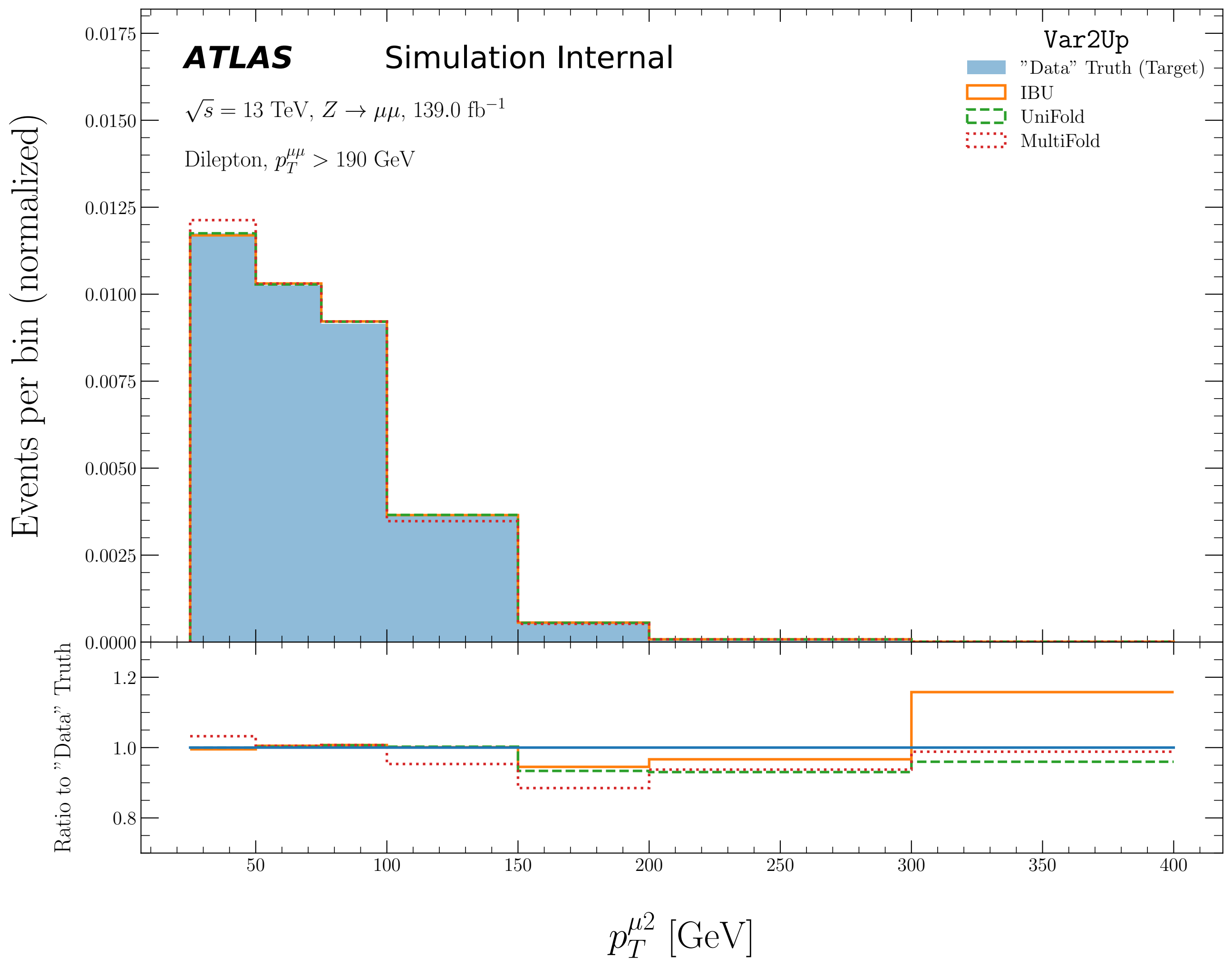


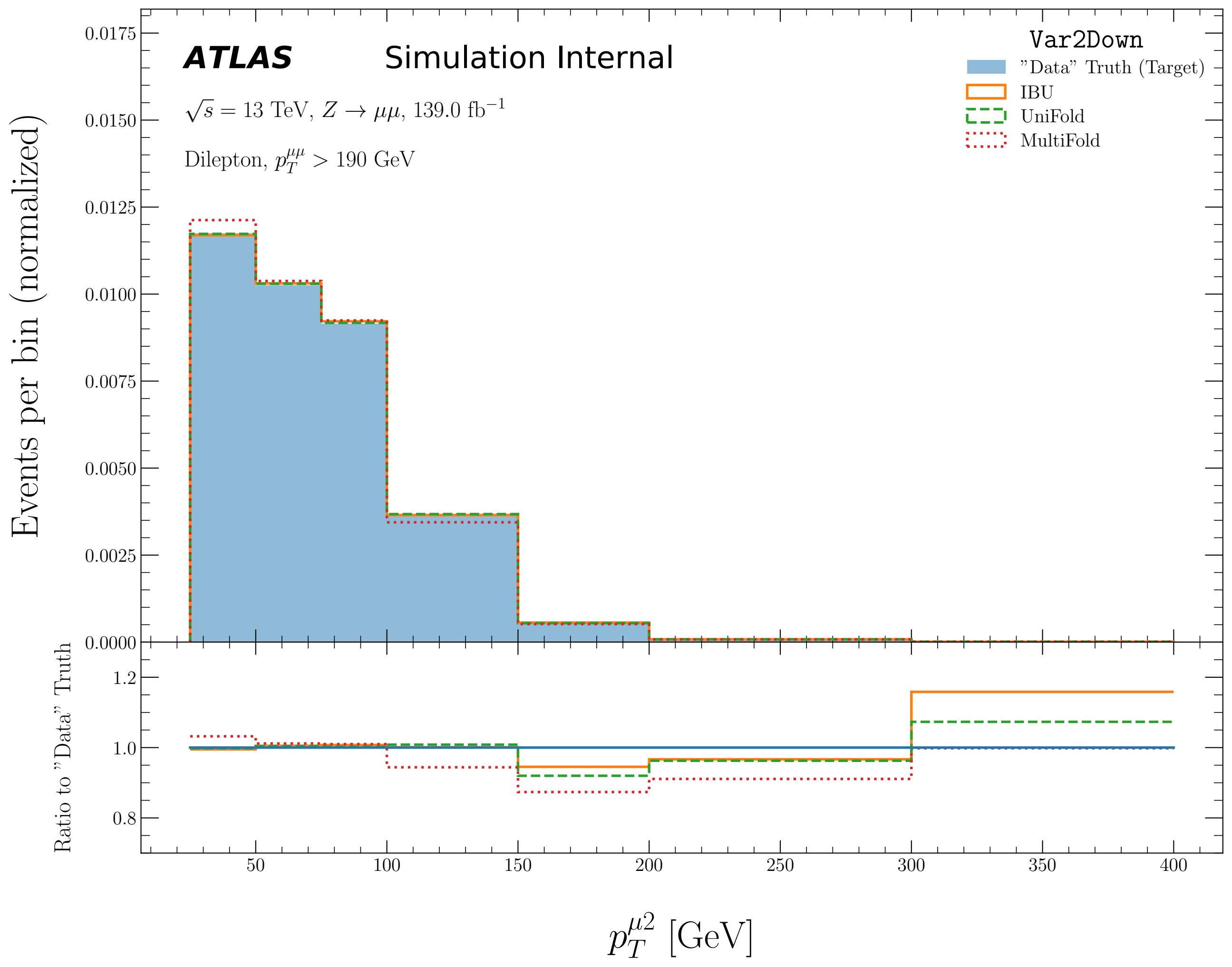




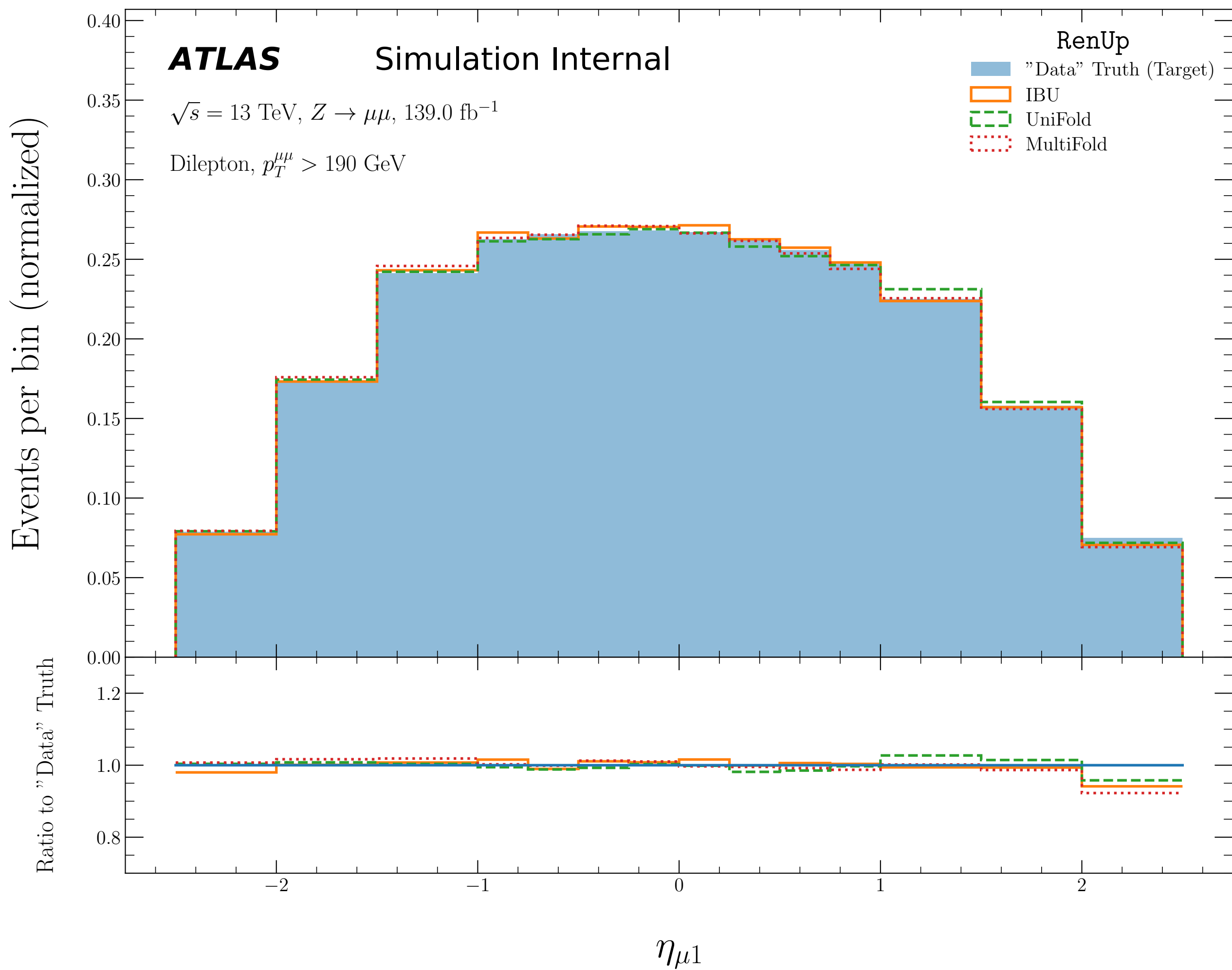


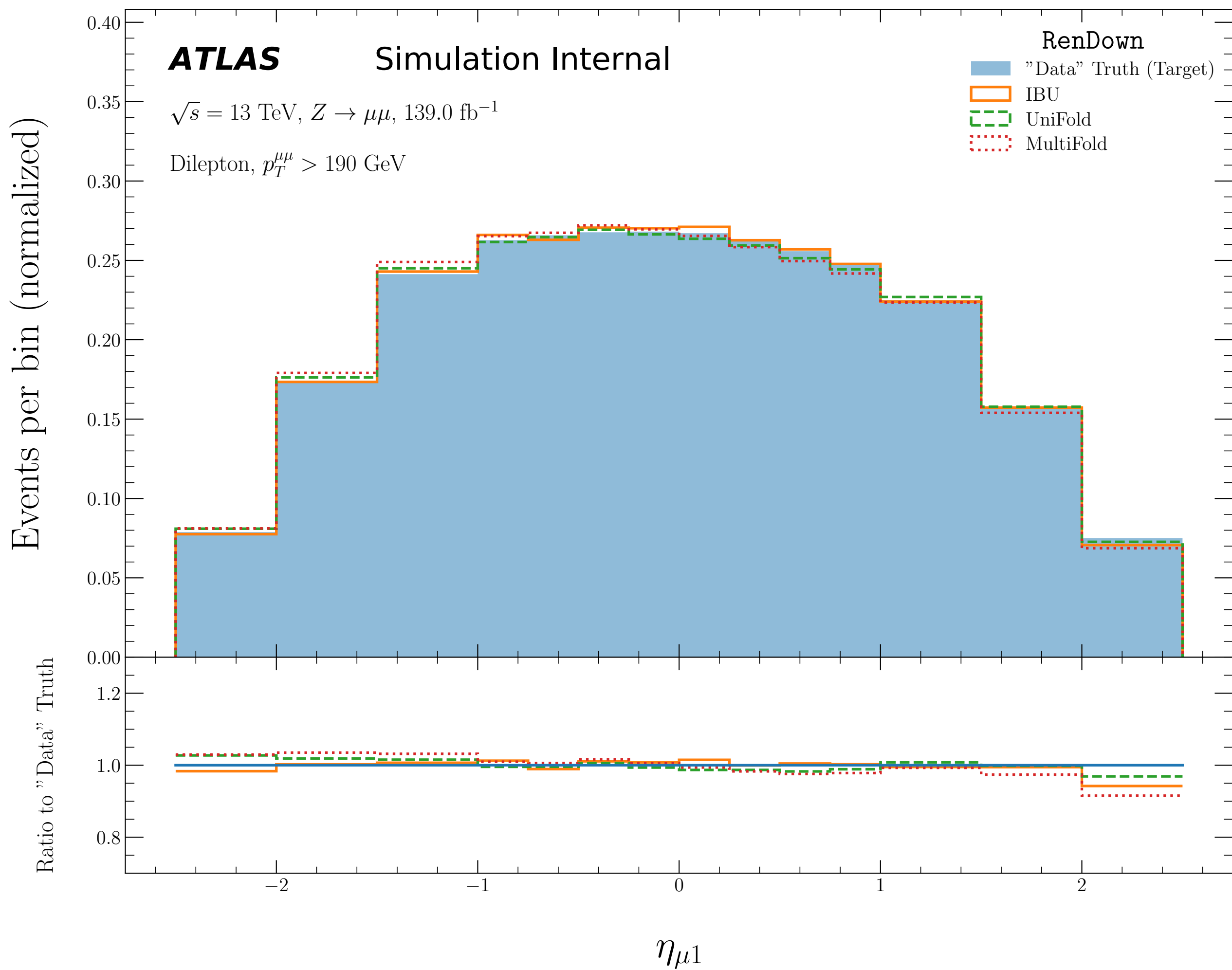


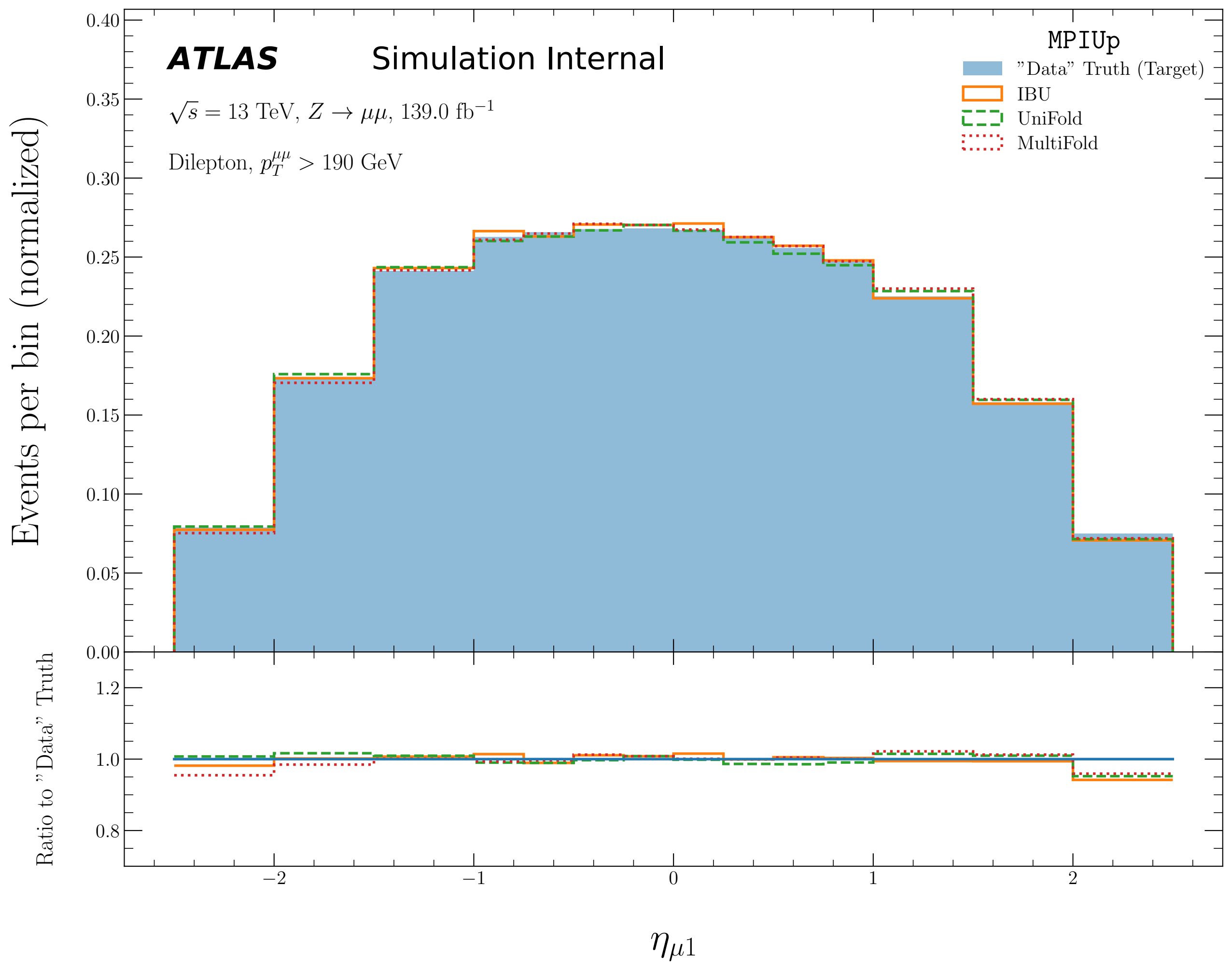


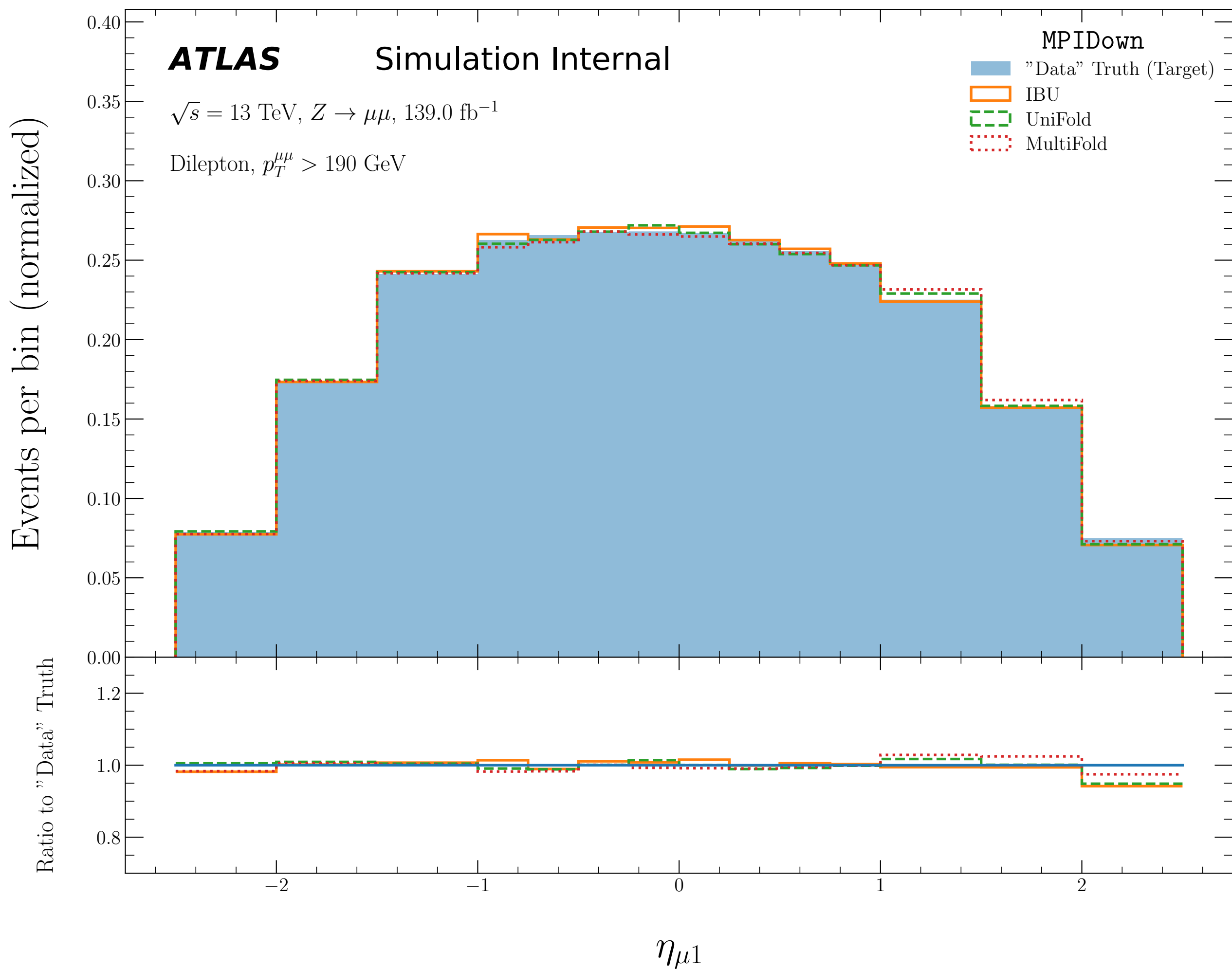


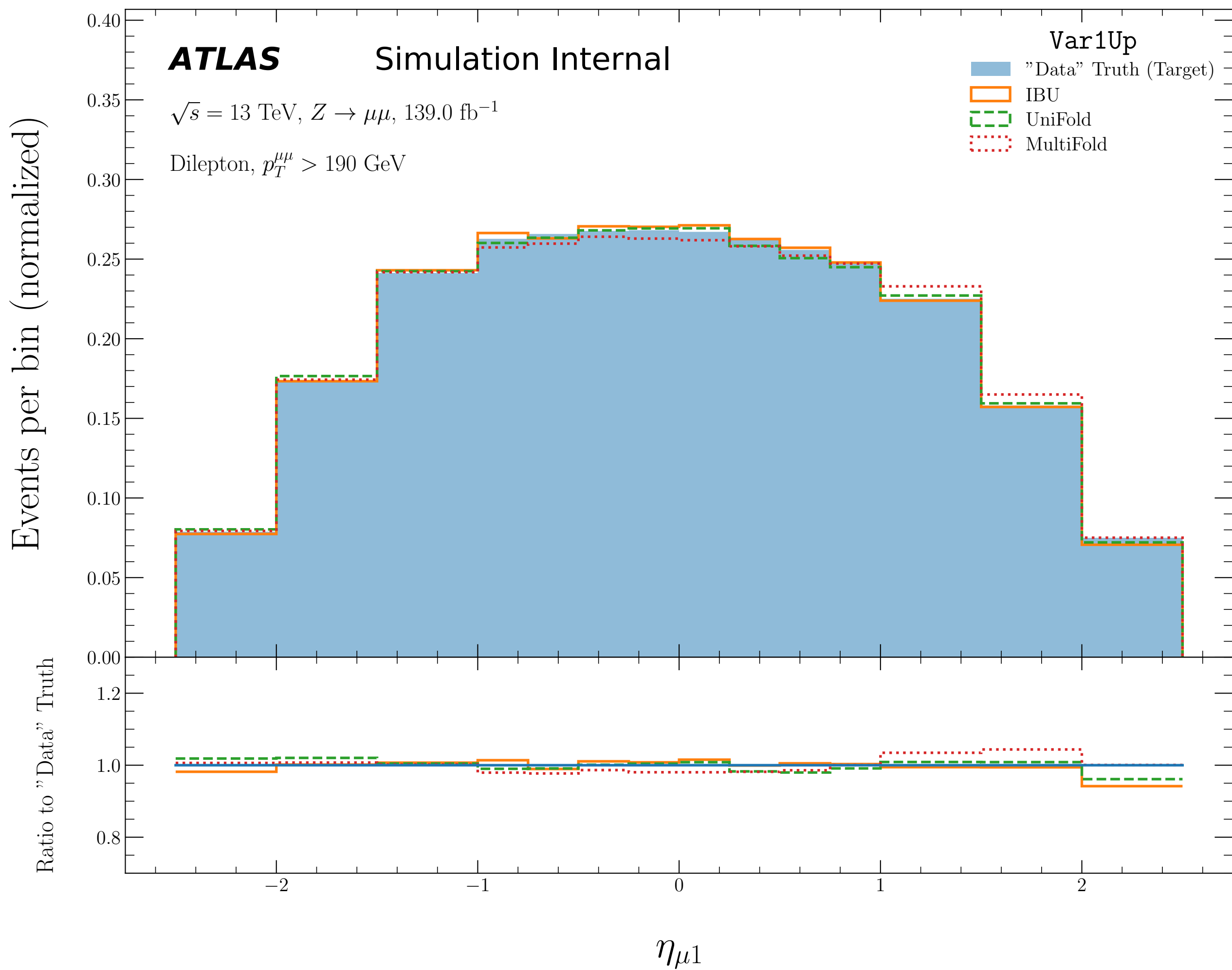


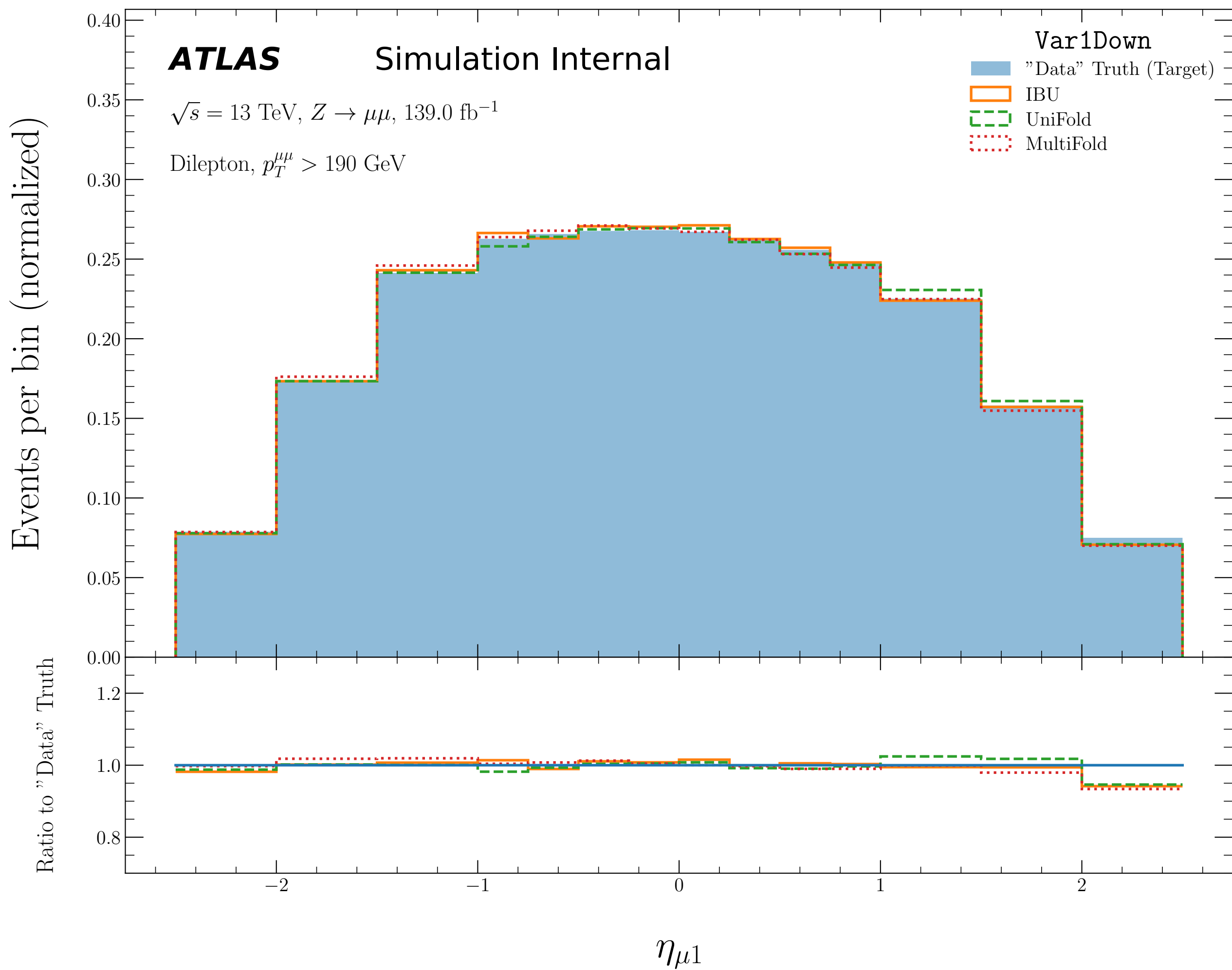


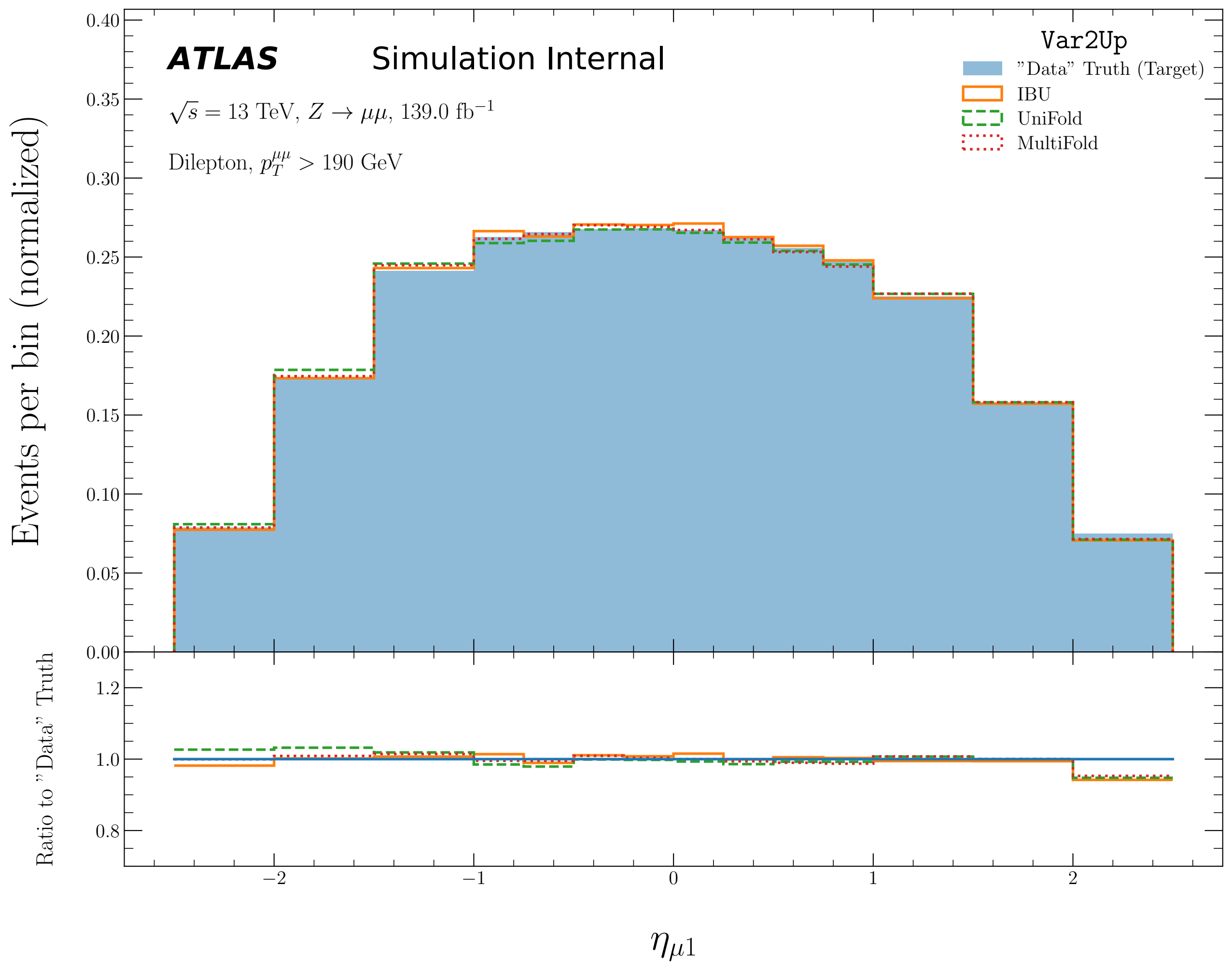


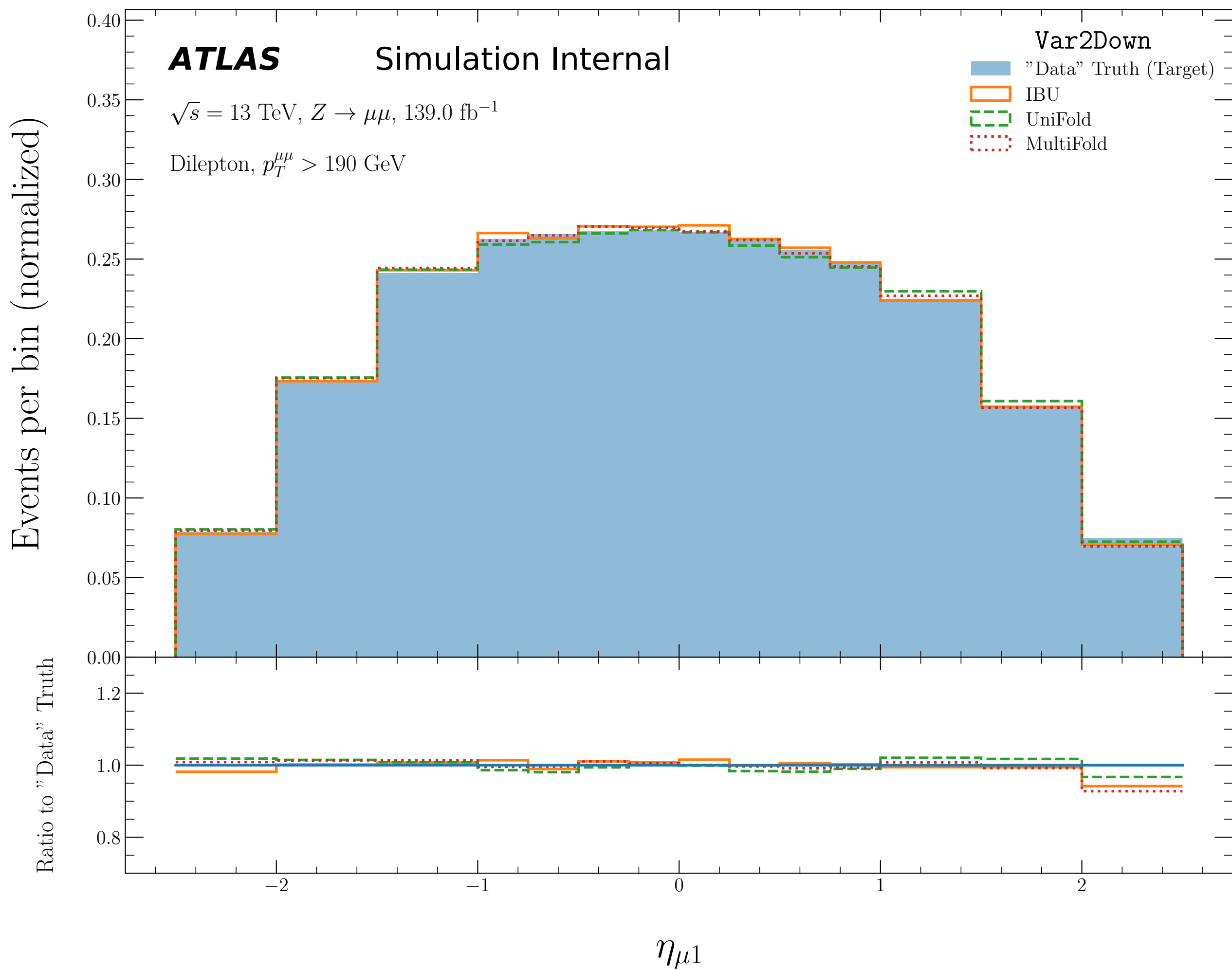




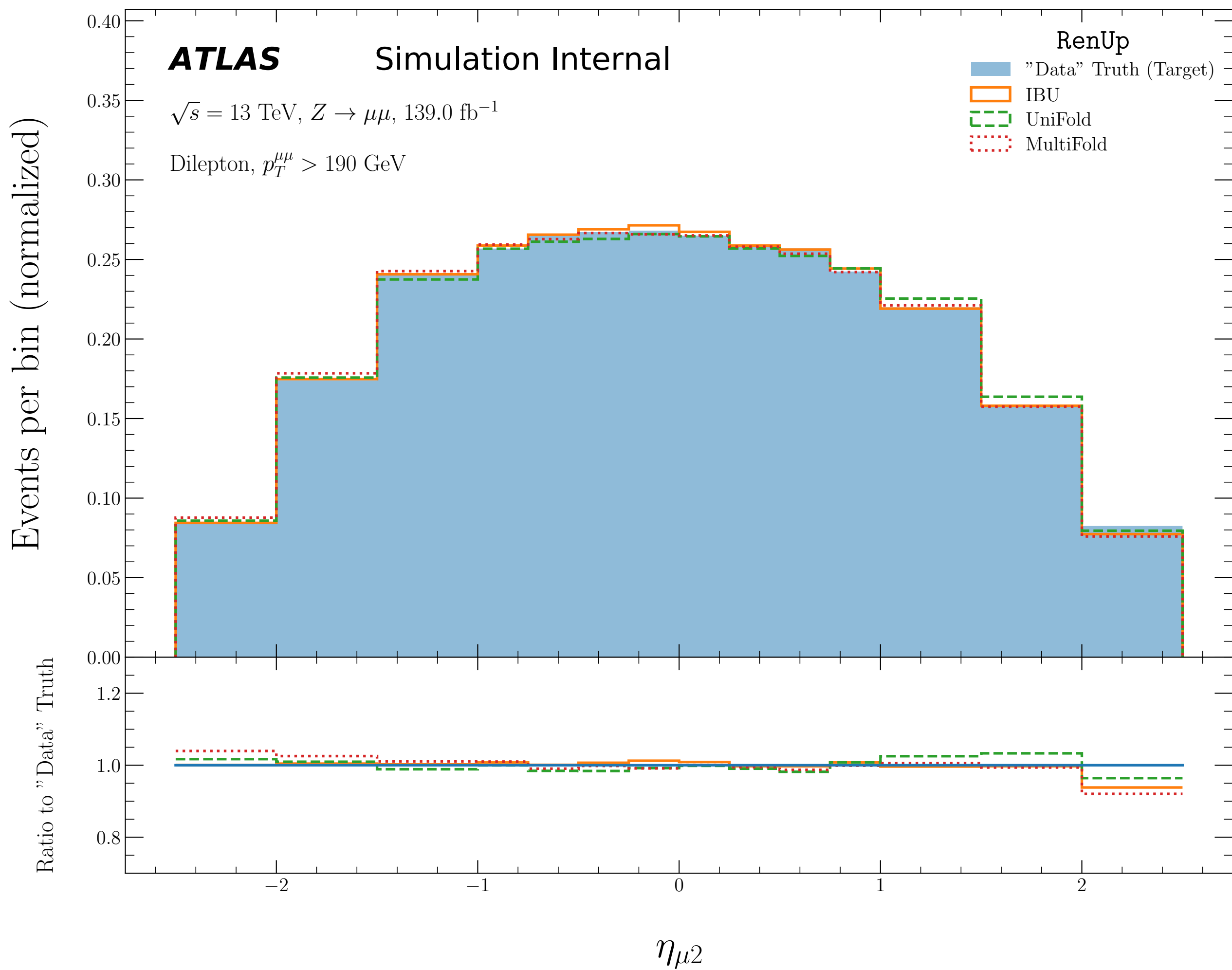


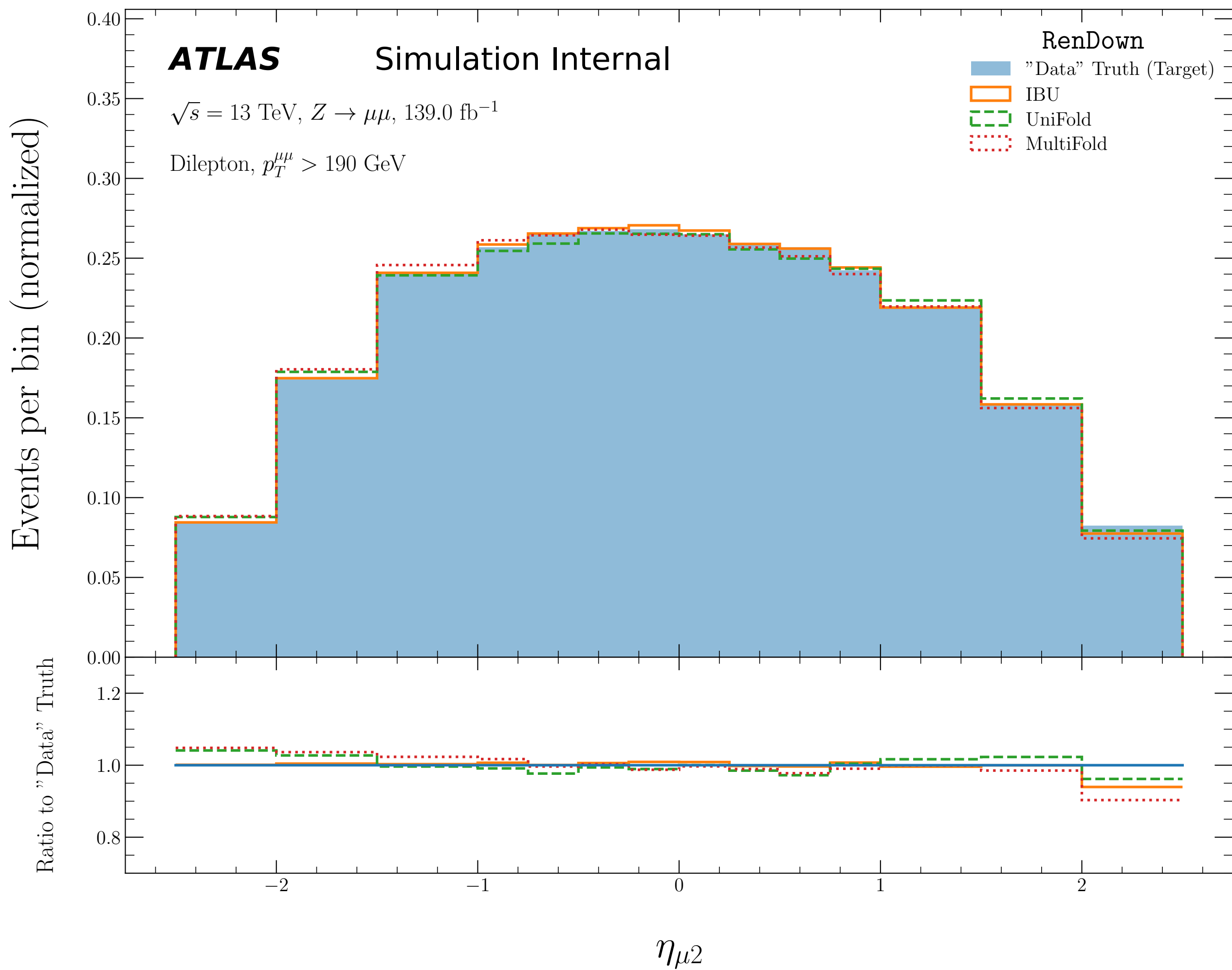


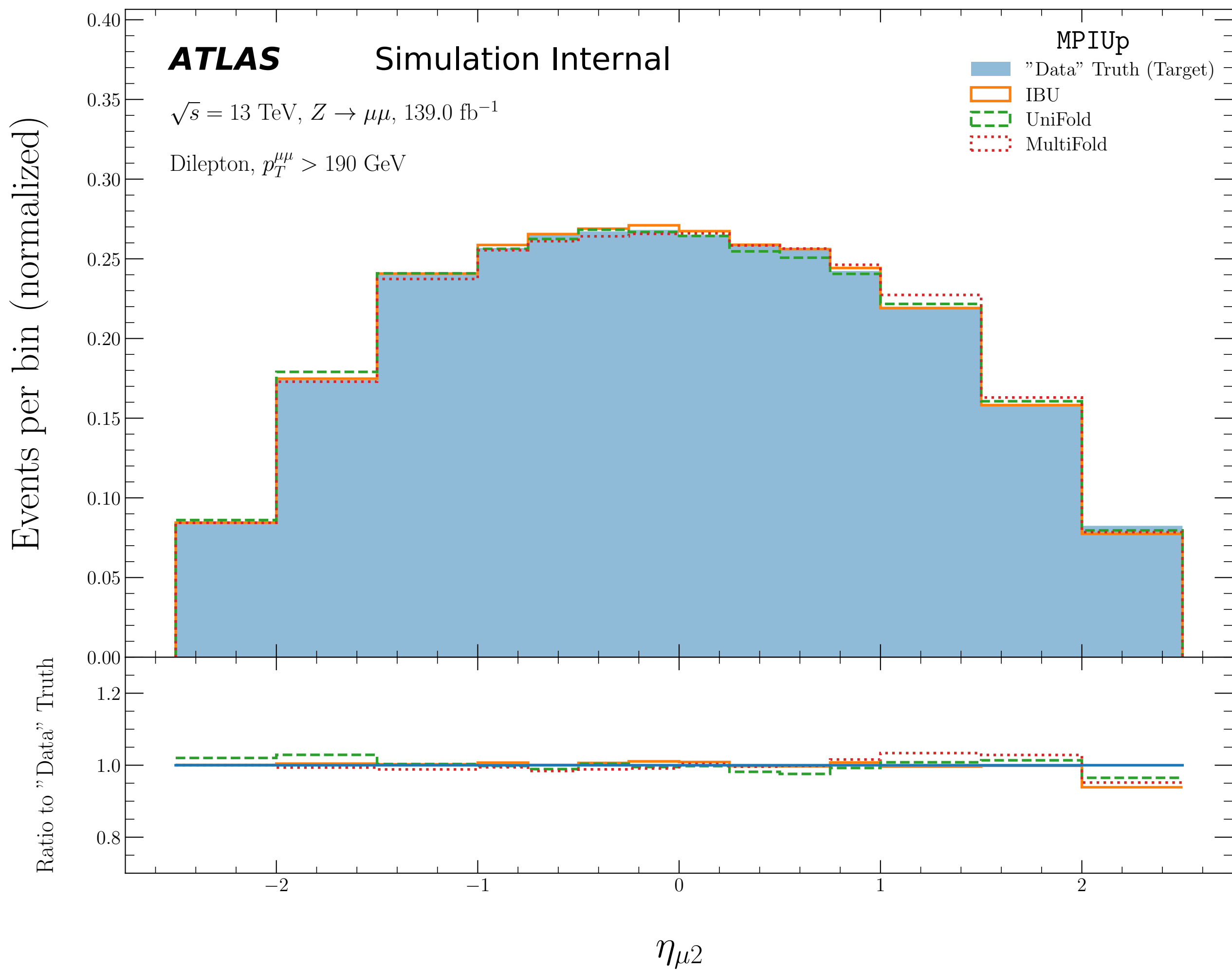


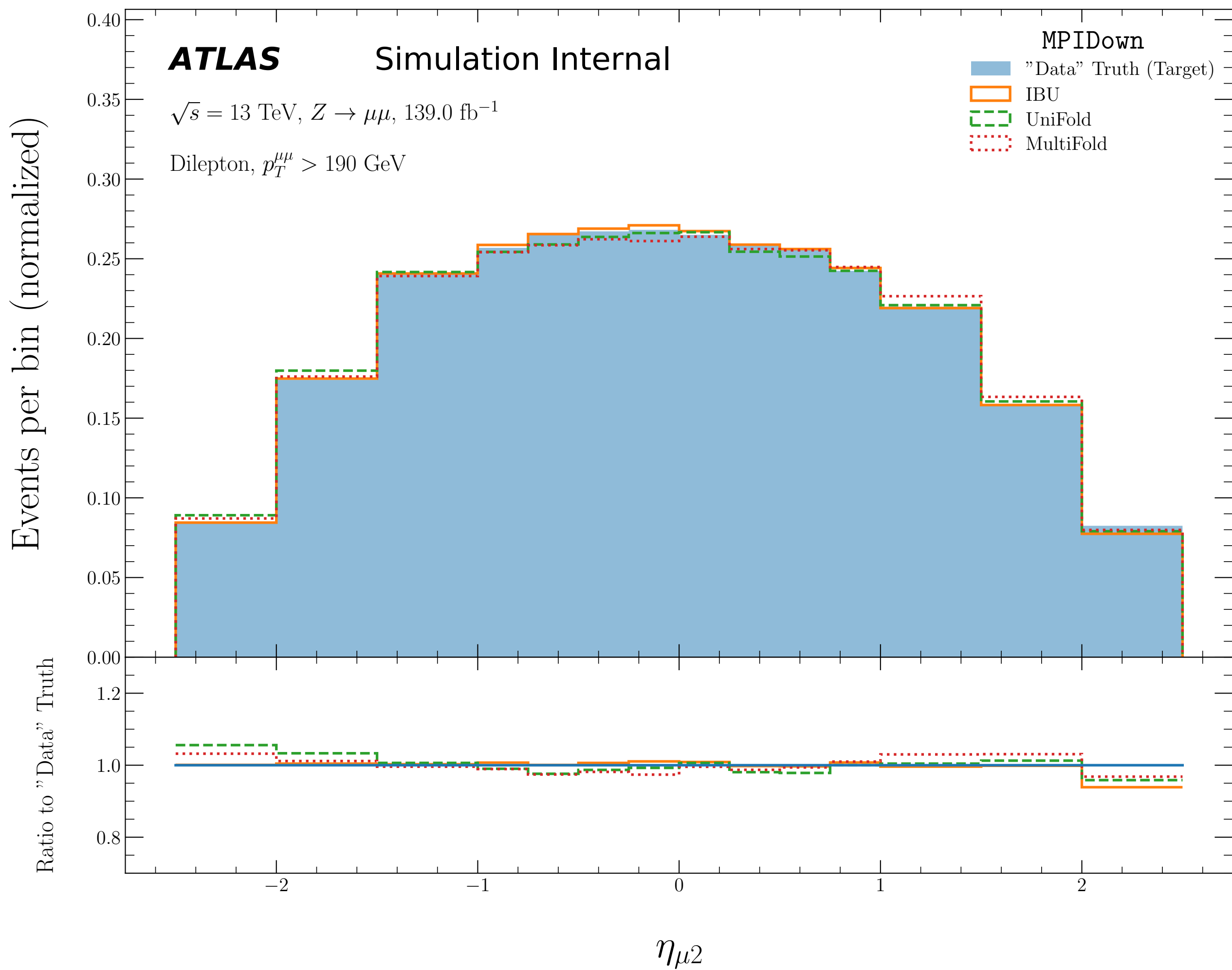


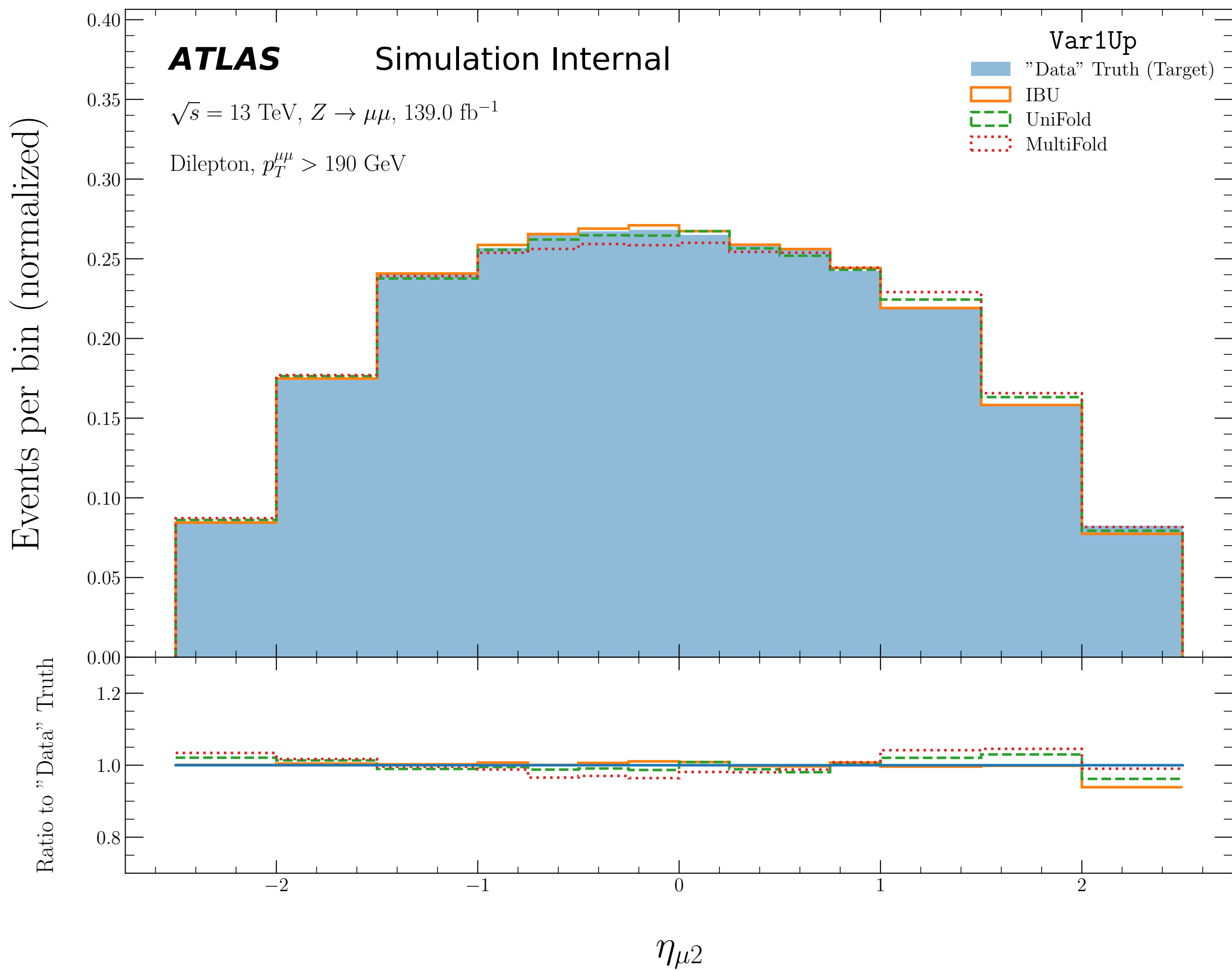


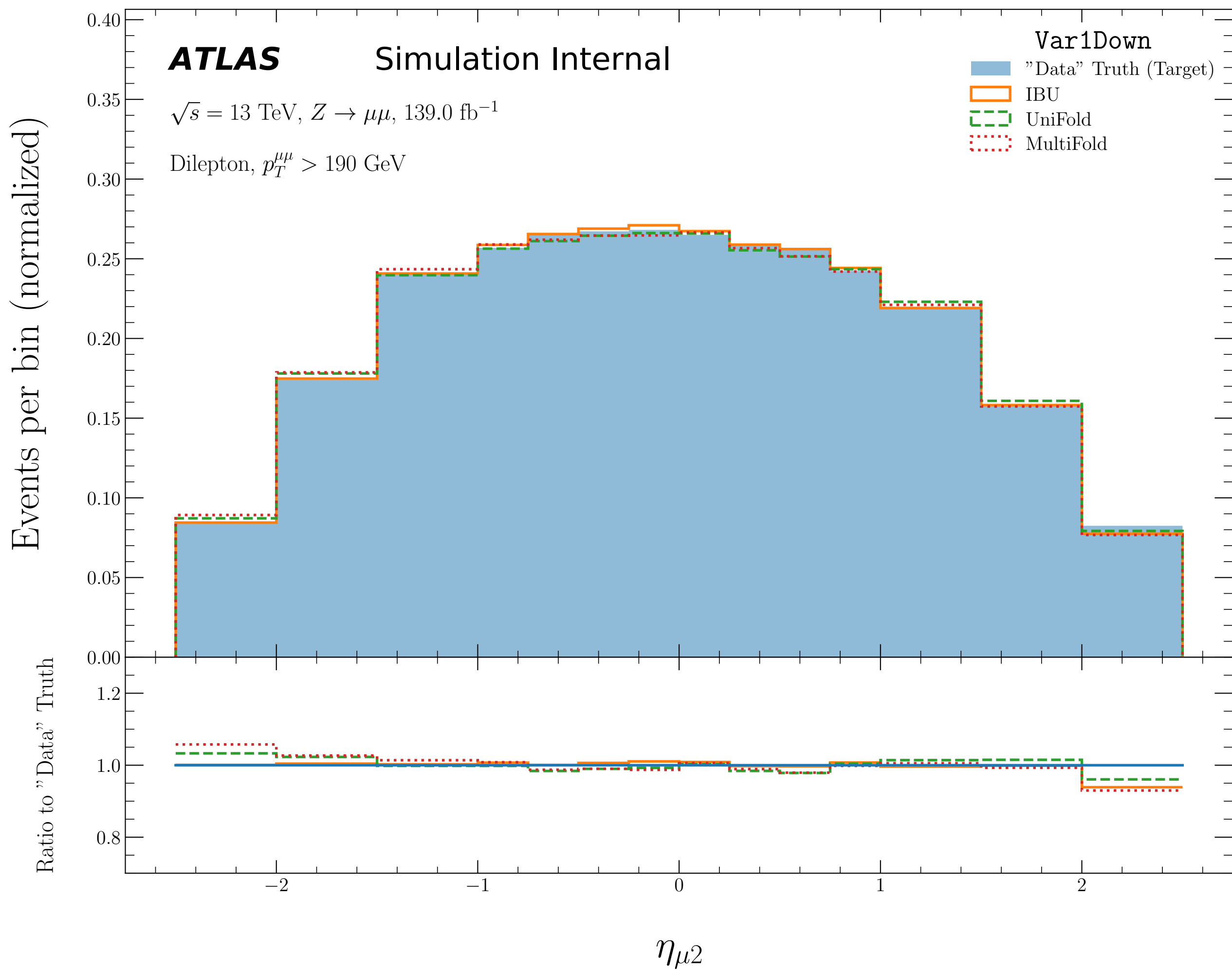


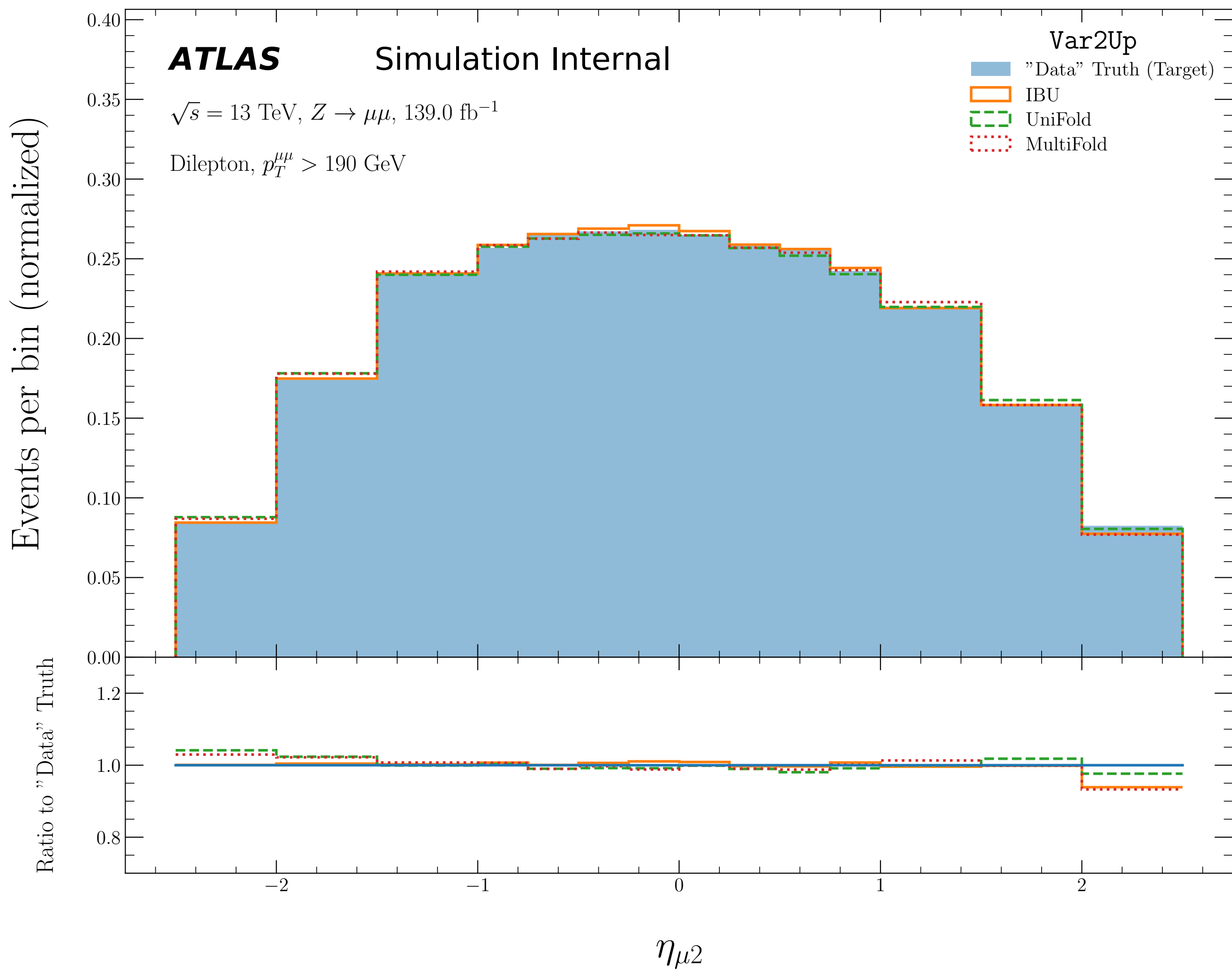


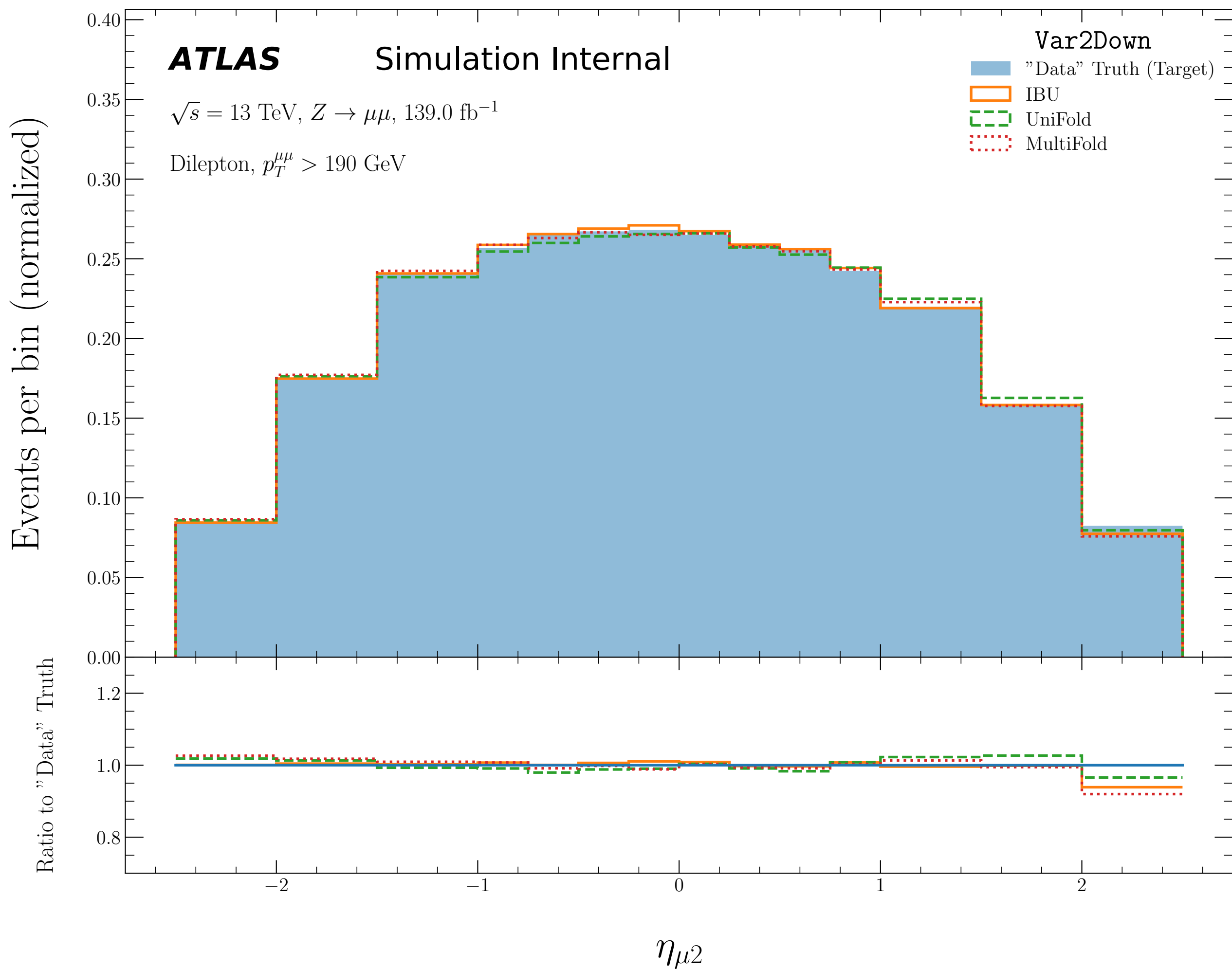




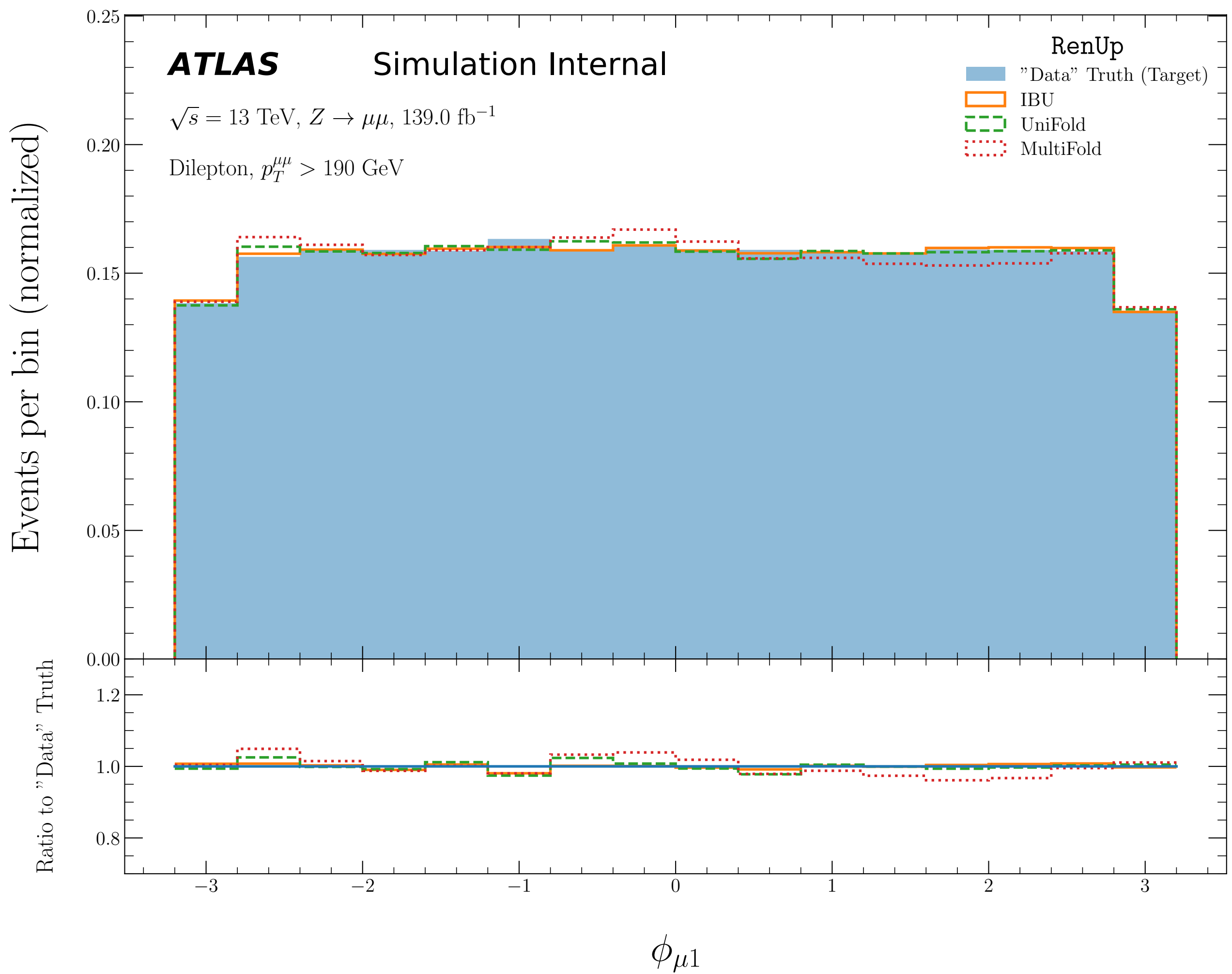












Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

RenDown

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

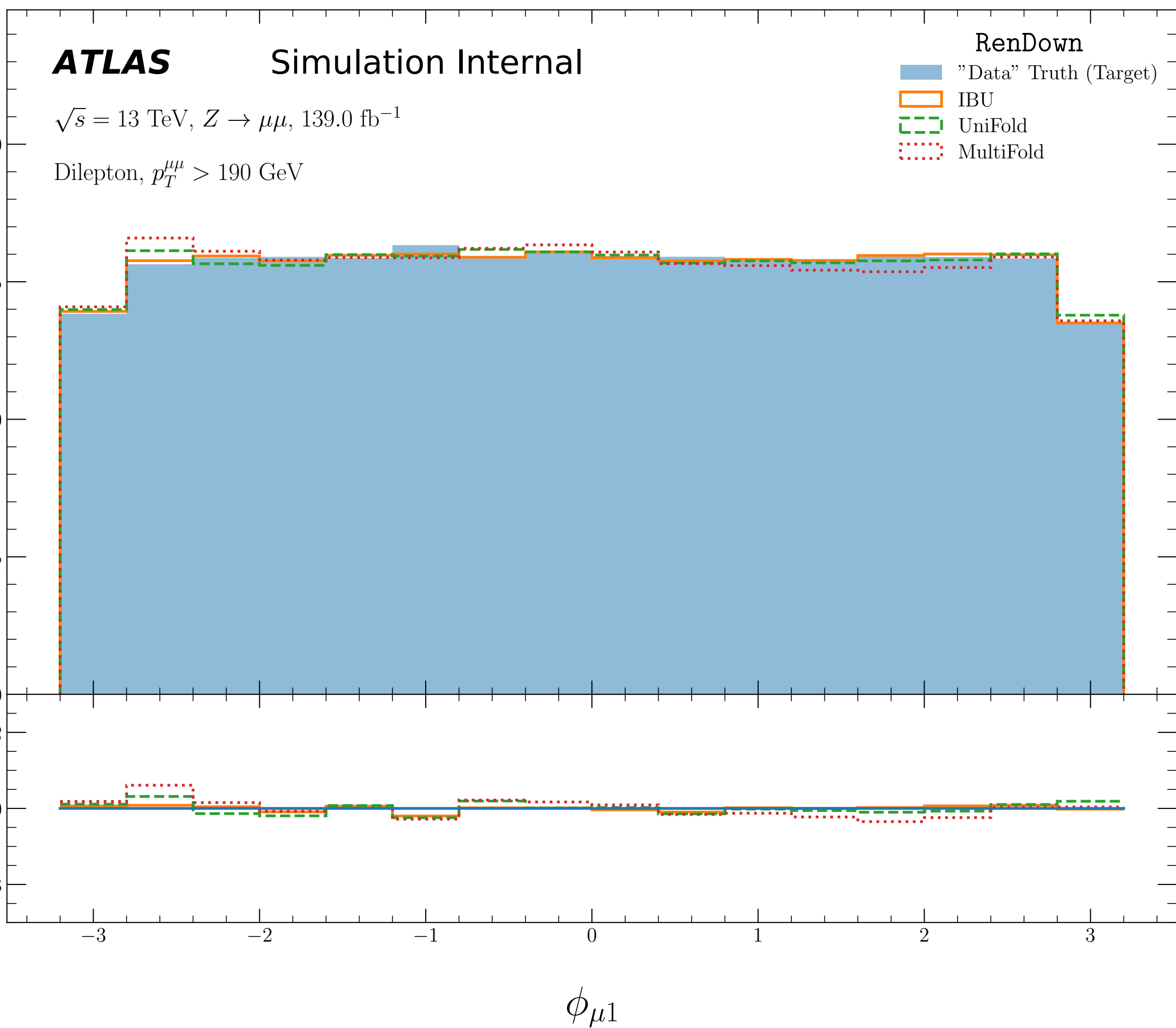
0

1

2

3

$\phi_{\mu 1}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

MPIUp

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

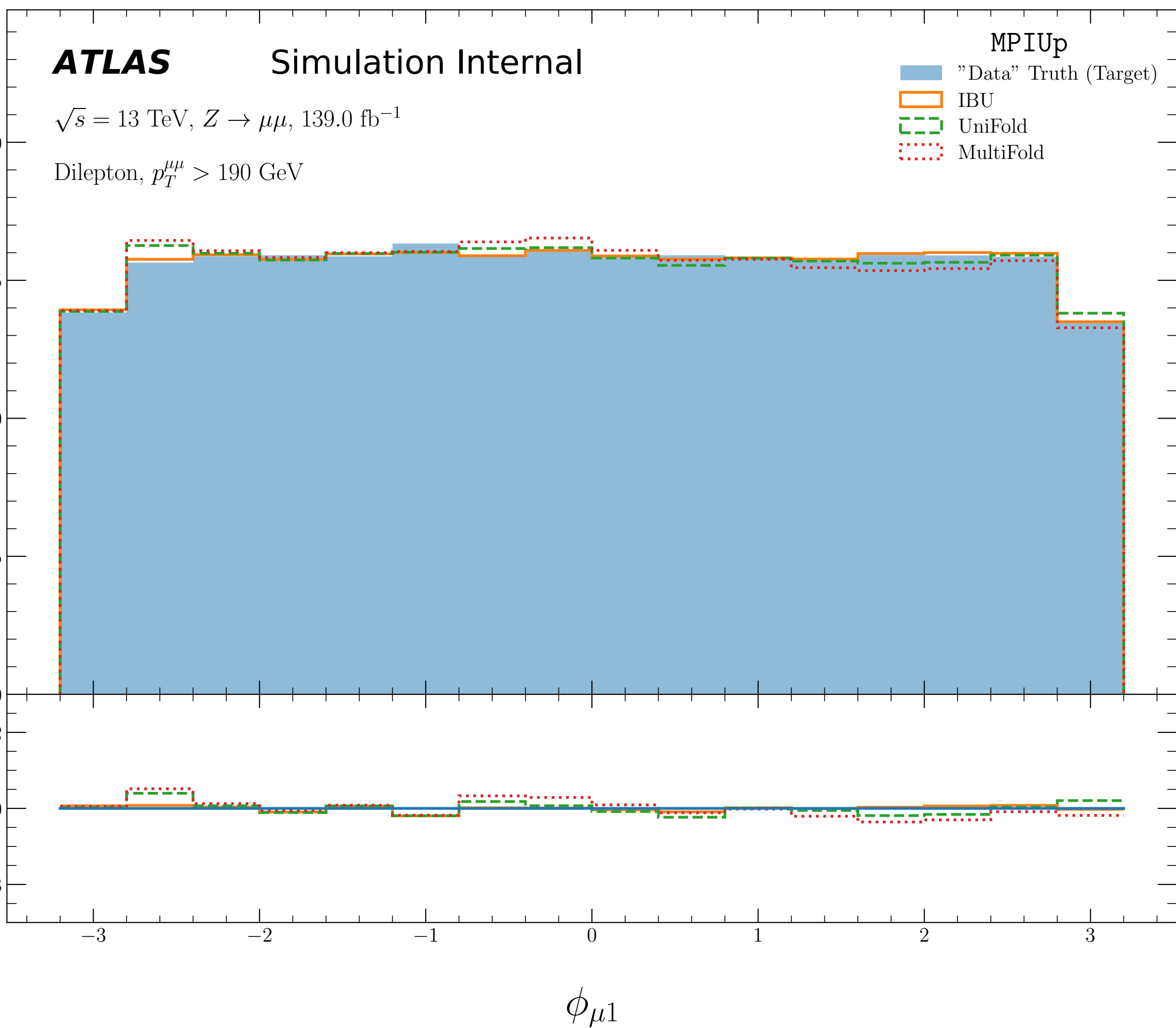
0

1

2

3

$\phi_{\mu 1}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

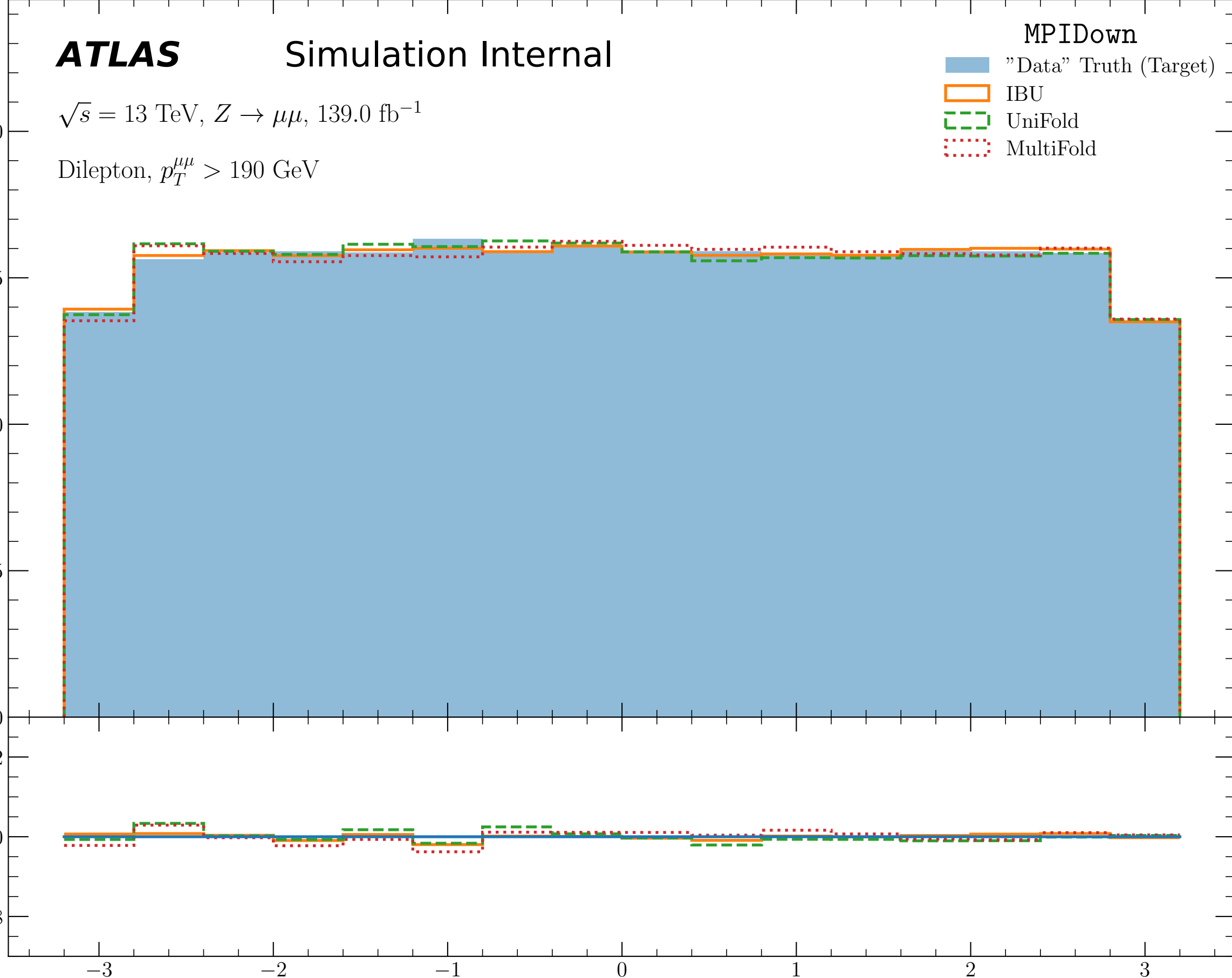
MPIDown

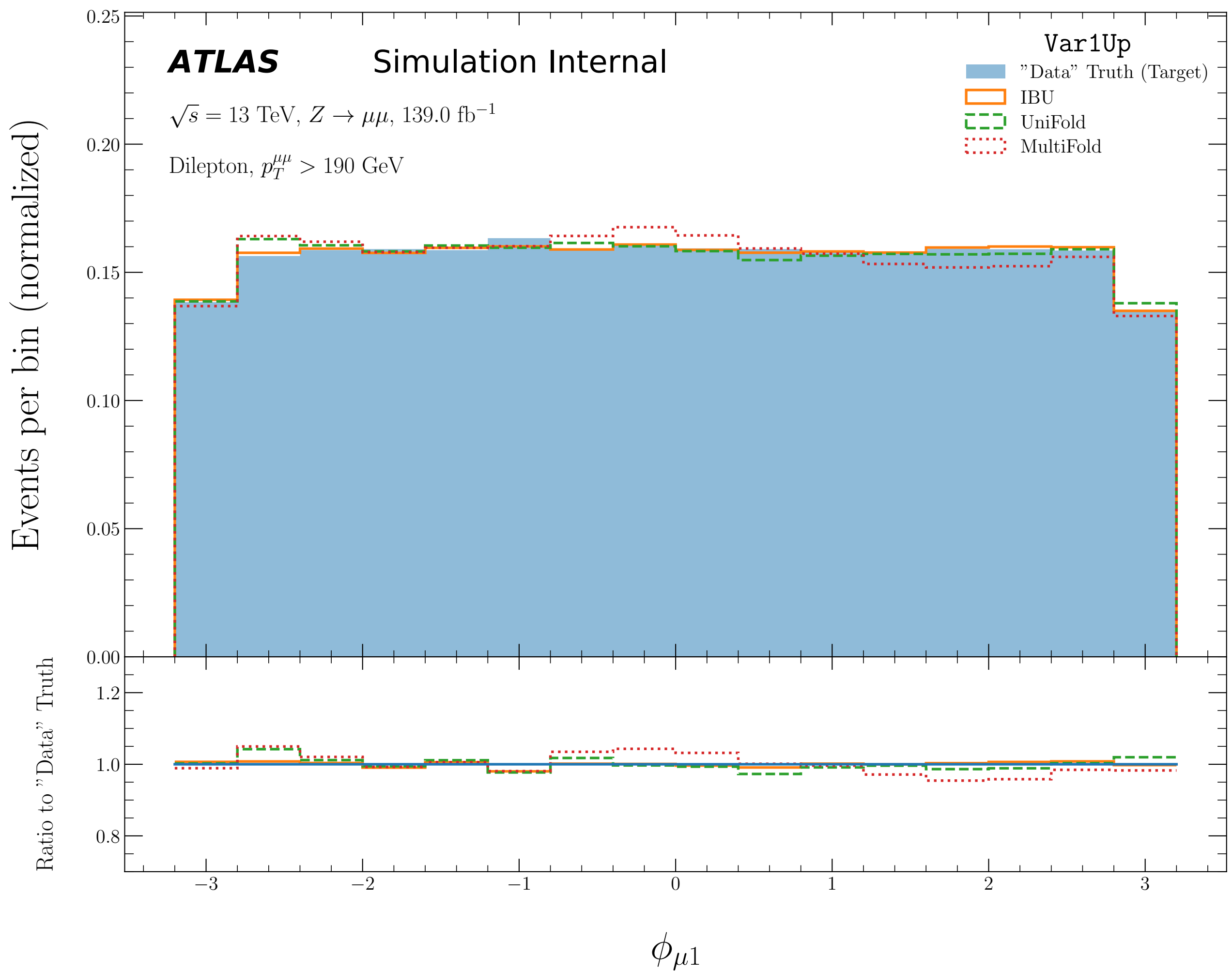
- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20  
0.15  
0.10  
0.05  
0.00  
1.2  
1.0  
0.8

Ratio to "Data" Truth

$\phi_{\mu 1}$





Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var1Down

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

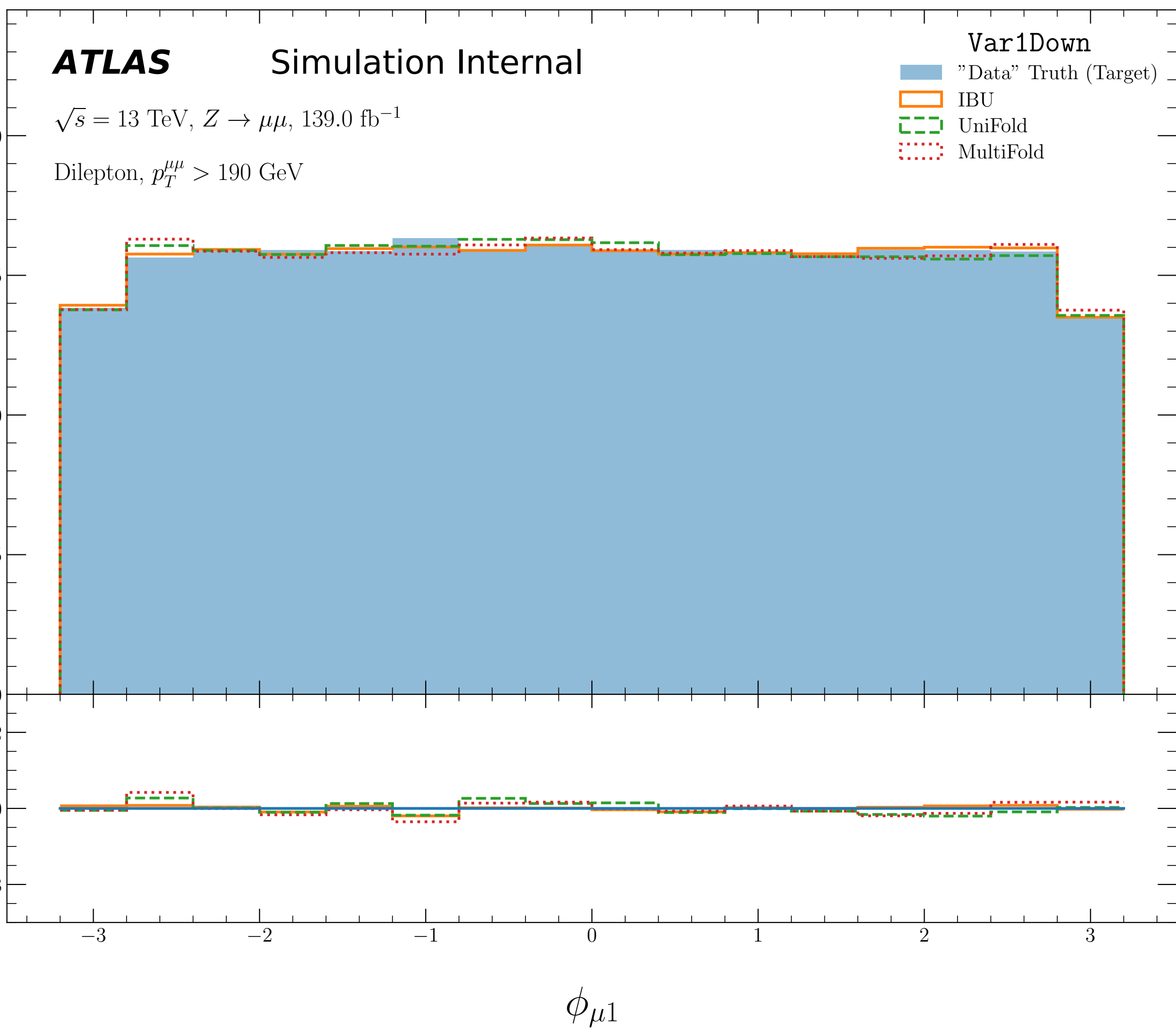
0

1

2

3

$\phi_{\mu 1}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var2Up

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

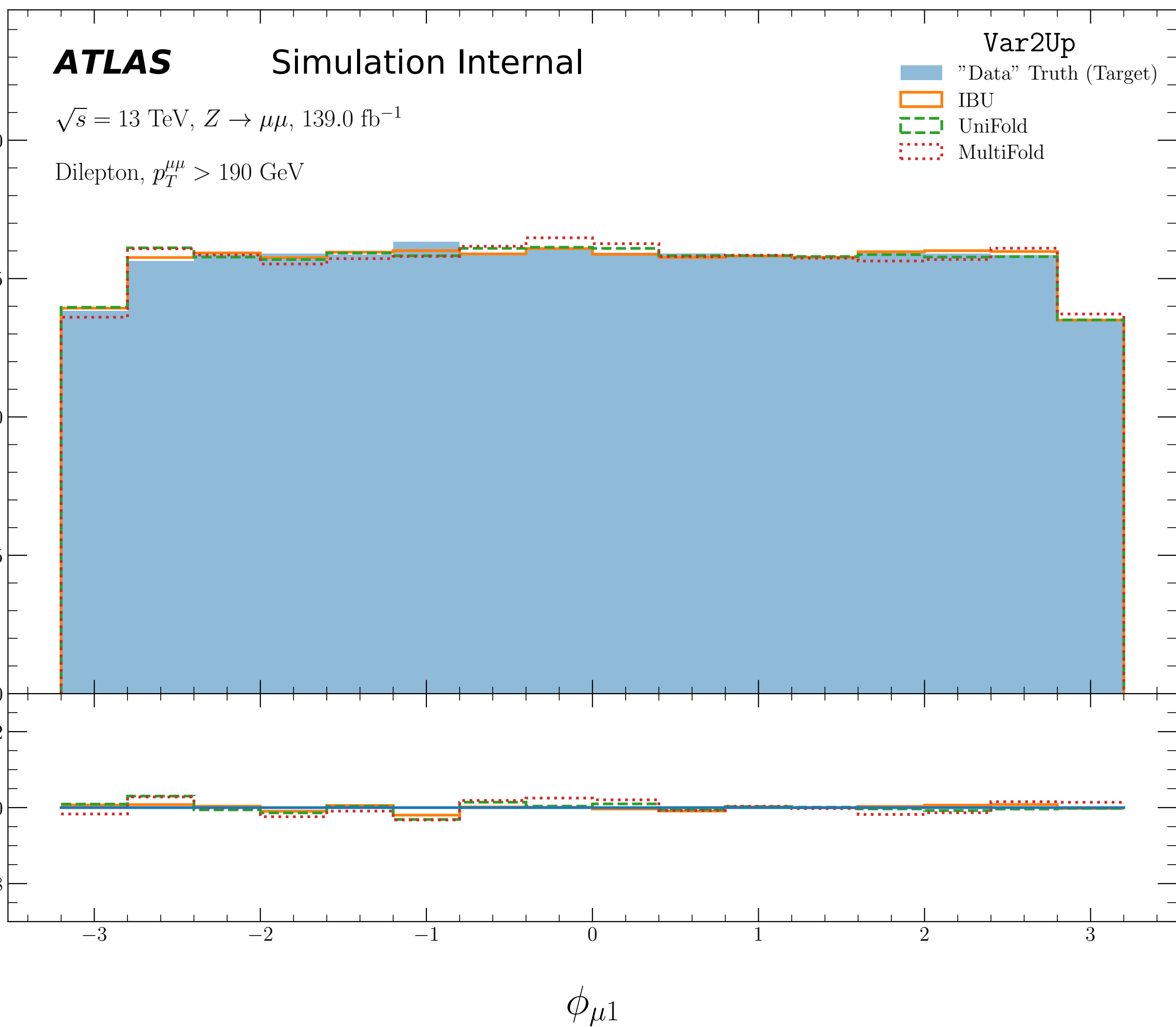
0

1

2

3

$\phi_{\mu 1}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var2Down

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

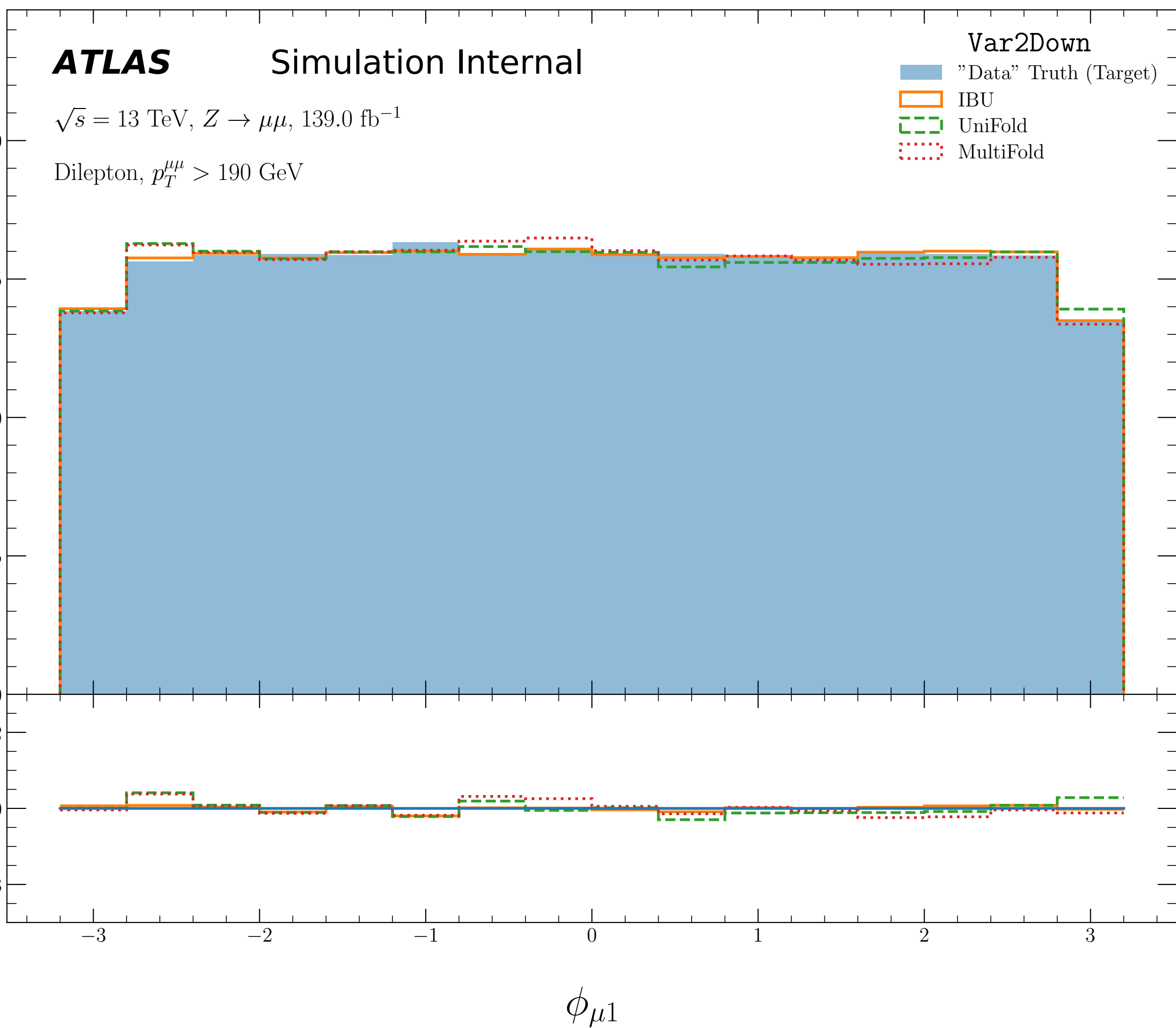
0

1

2

3

$\phi_{\mu 1}$





Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

RenUp

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

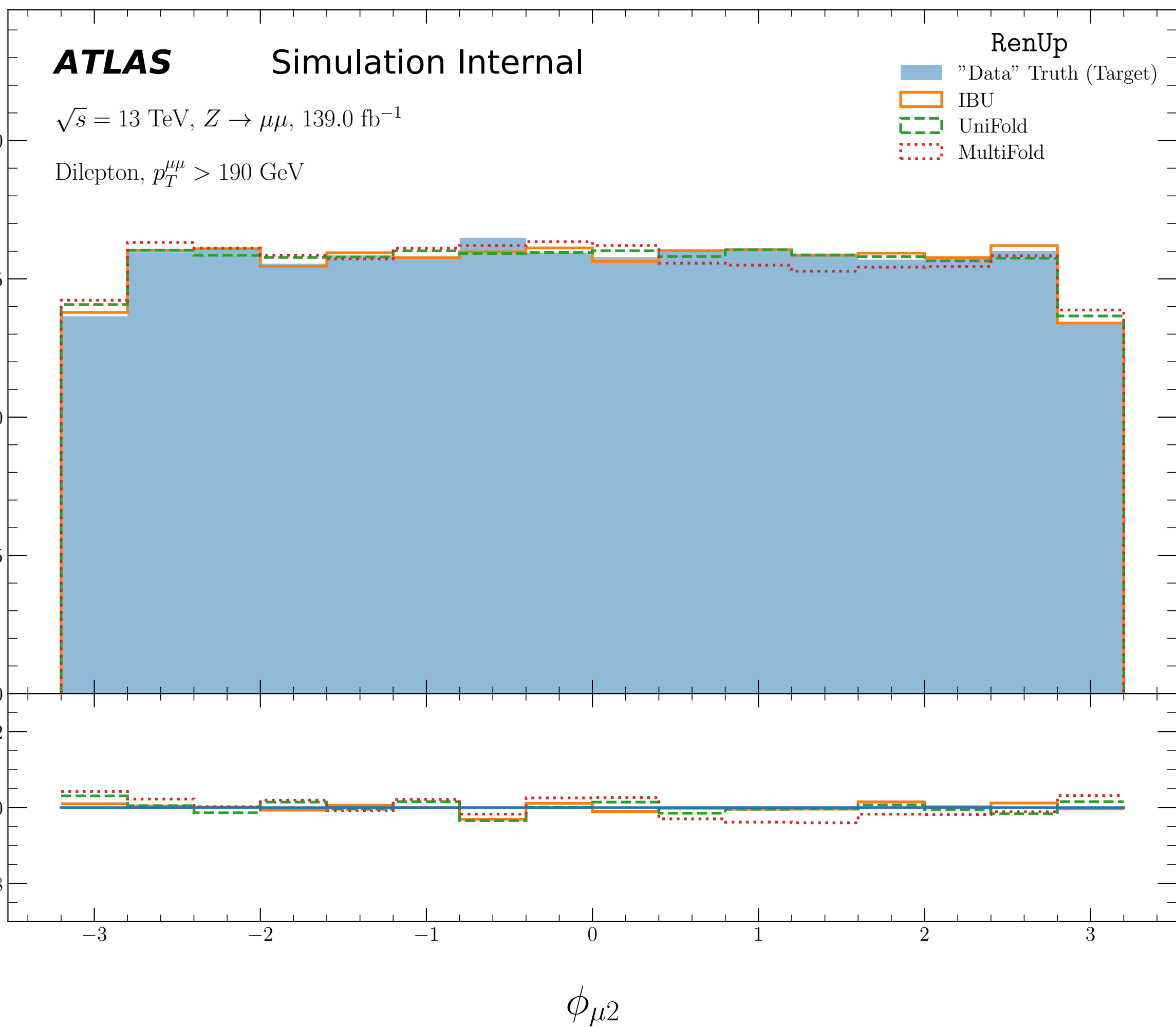
Ratio to "Data" Truth

1.2

1.0

0.8

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

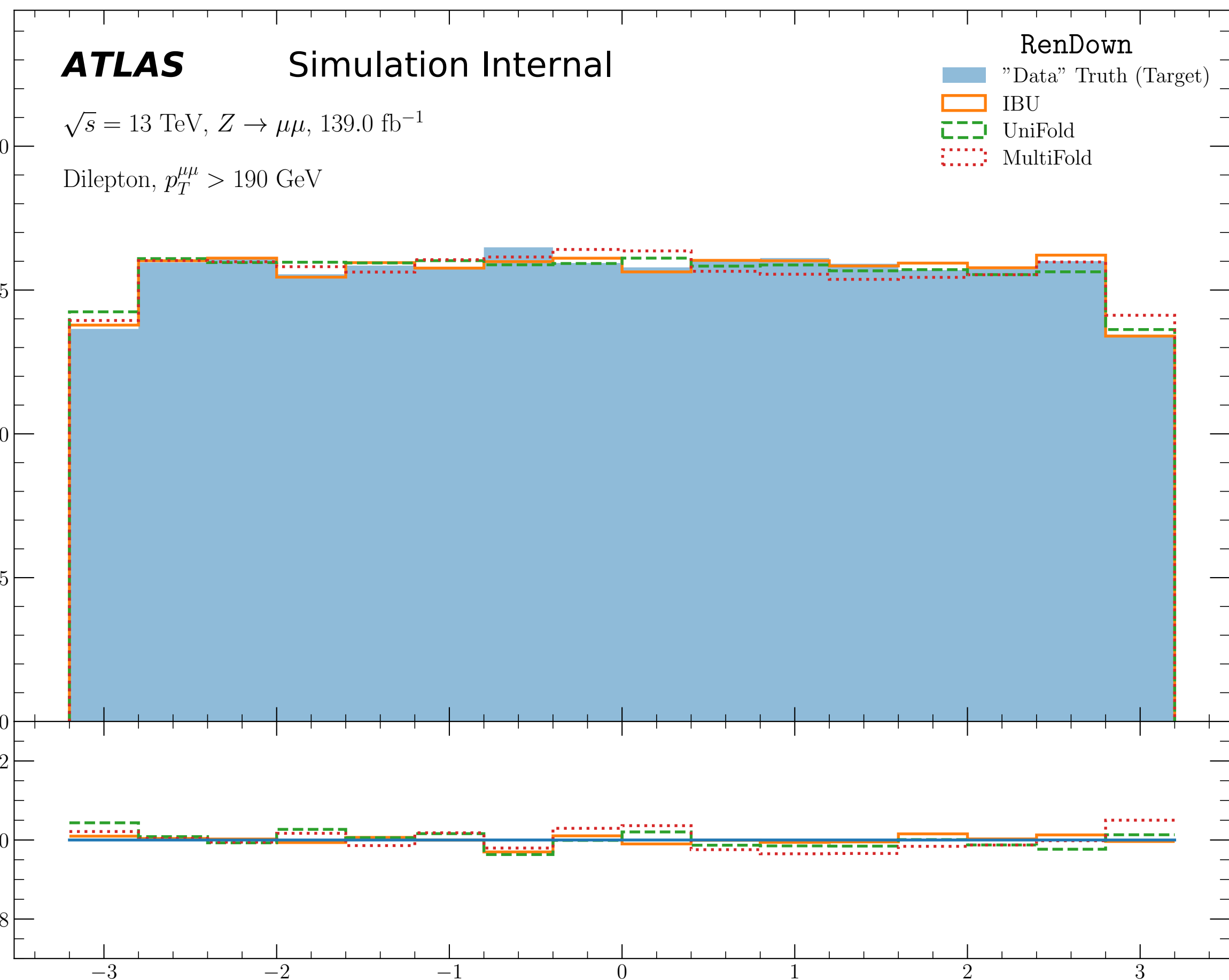
RenDown

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20  
0.15  
0.10  
0.05  
0.00  
1.2  
1.0  
0.8

Ratio to "Data" Truth

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

MPIUp

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

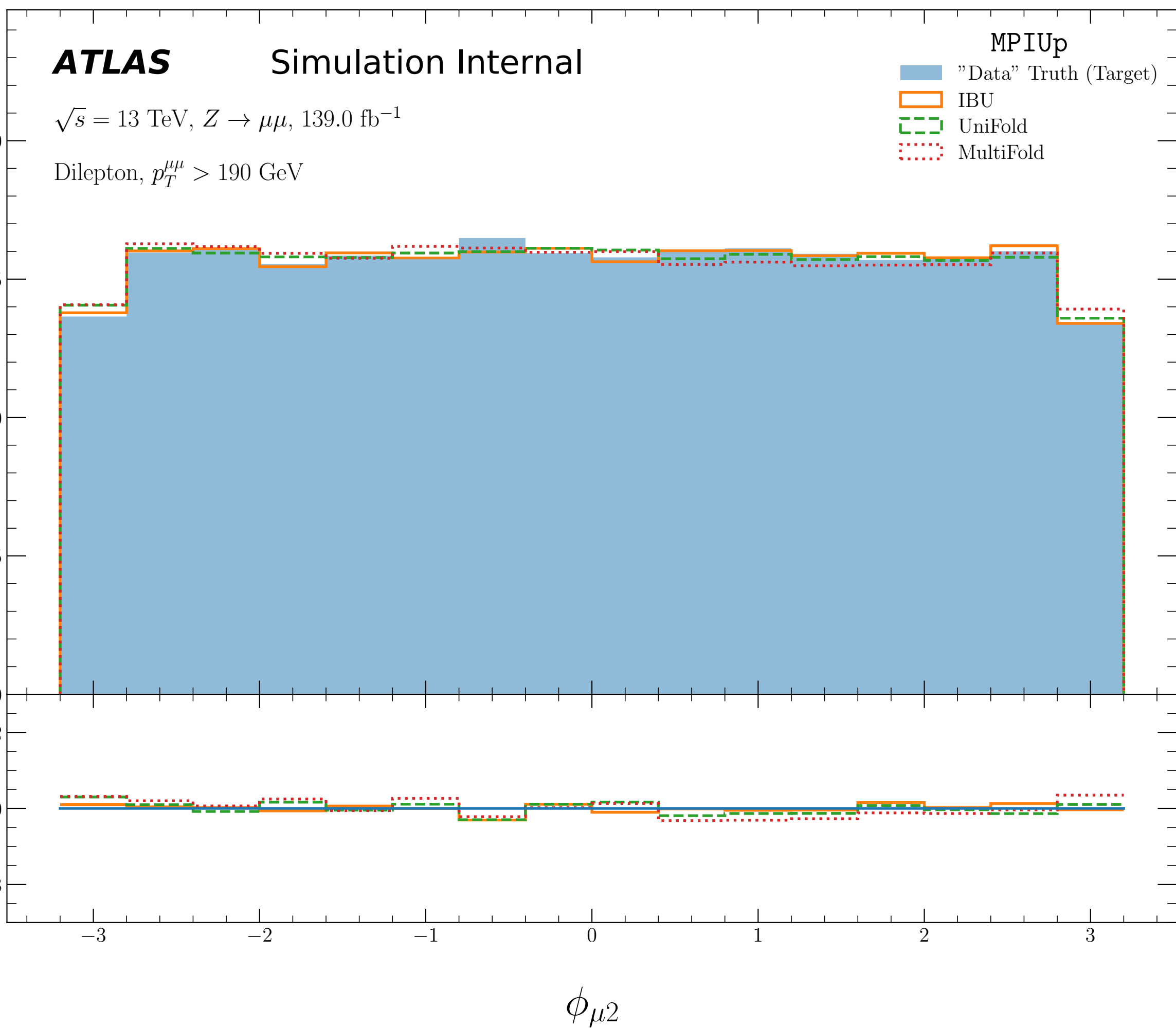
0

1

2

3

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

MPIDown

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

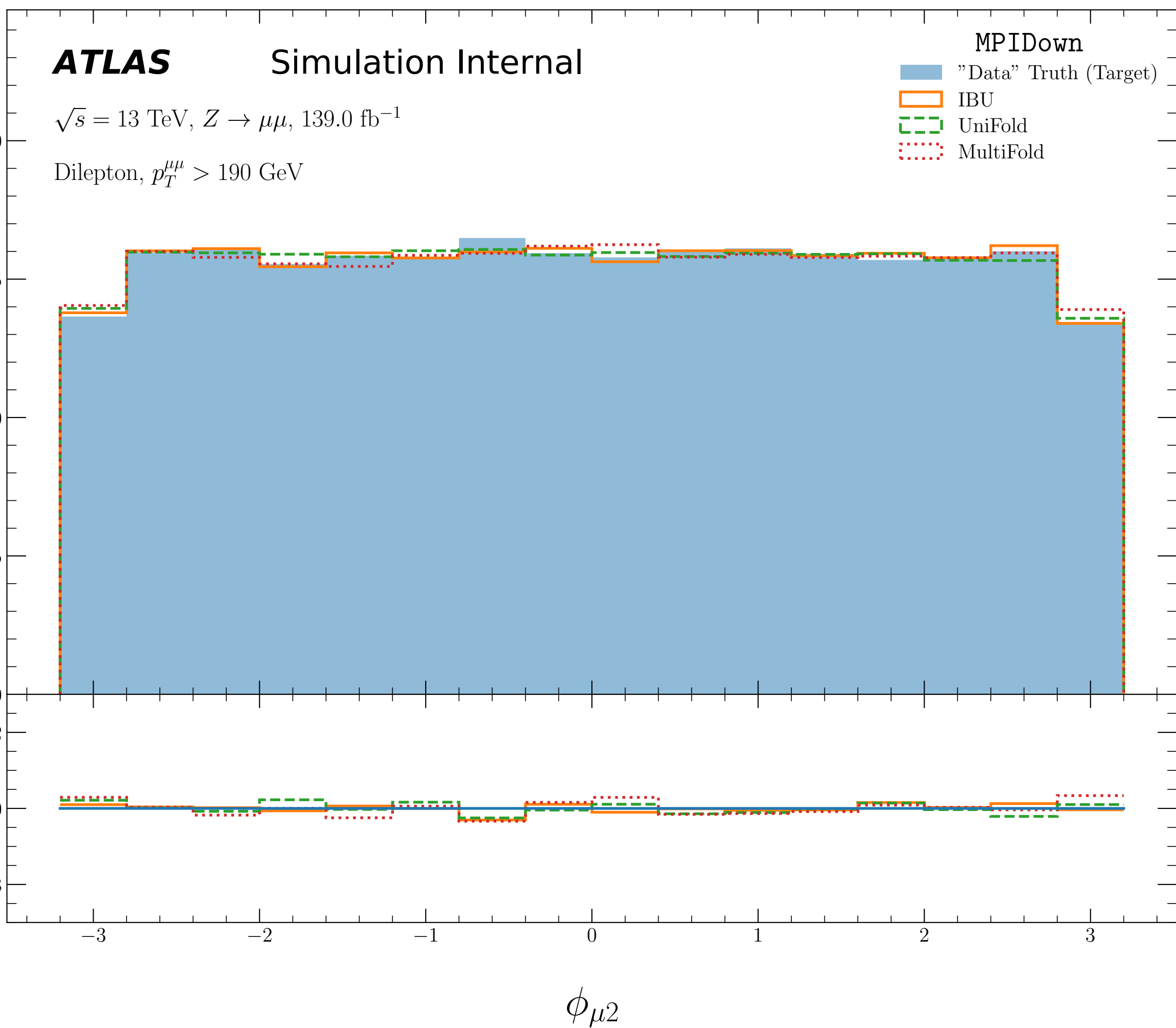
0

1

2

3

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

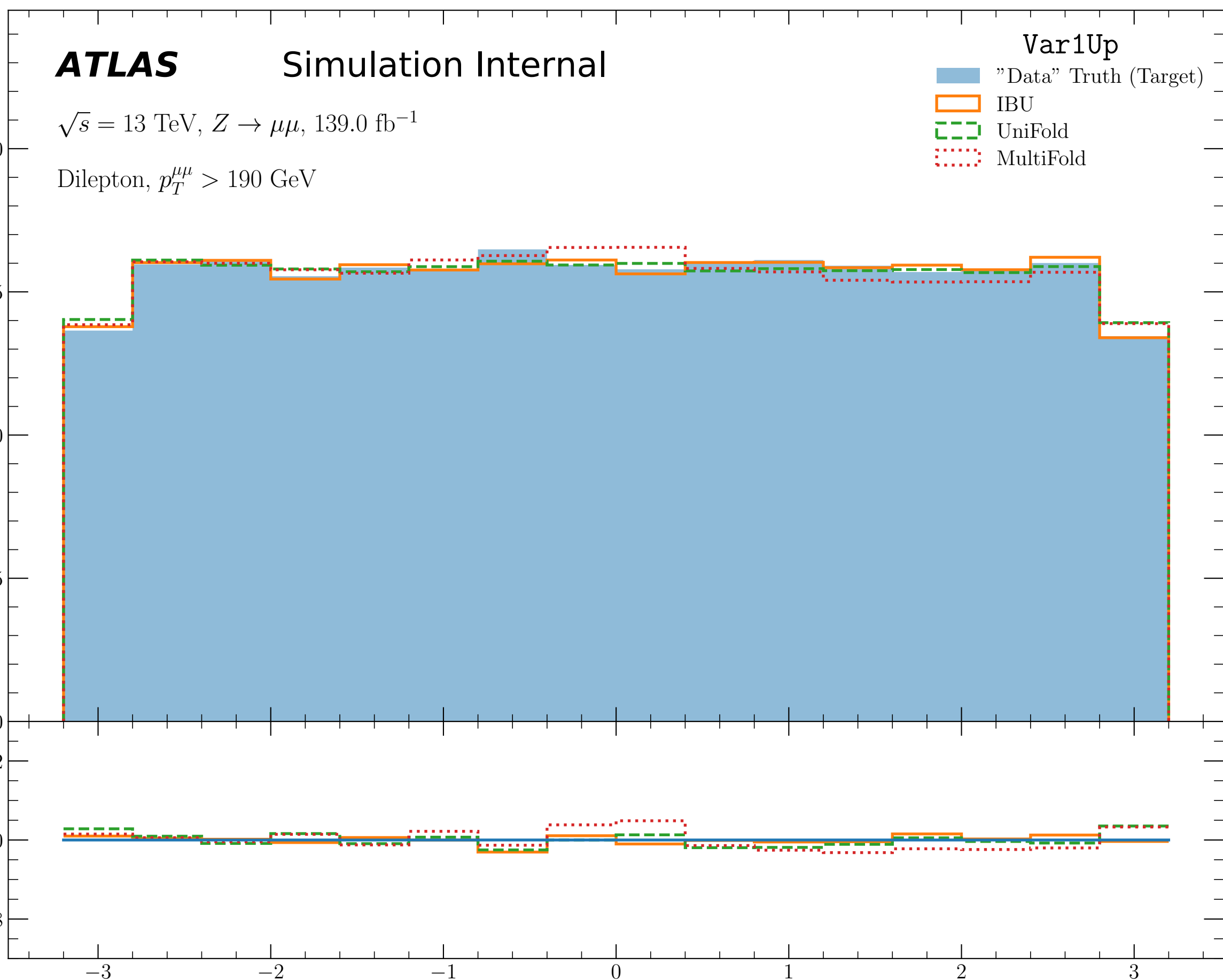
Var1Up

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20  
0.15  
0.10  
0.05  
0.00  
1.2  
1.0  
0.8

Ratio to "Data" Truth

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var1Down

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

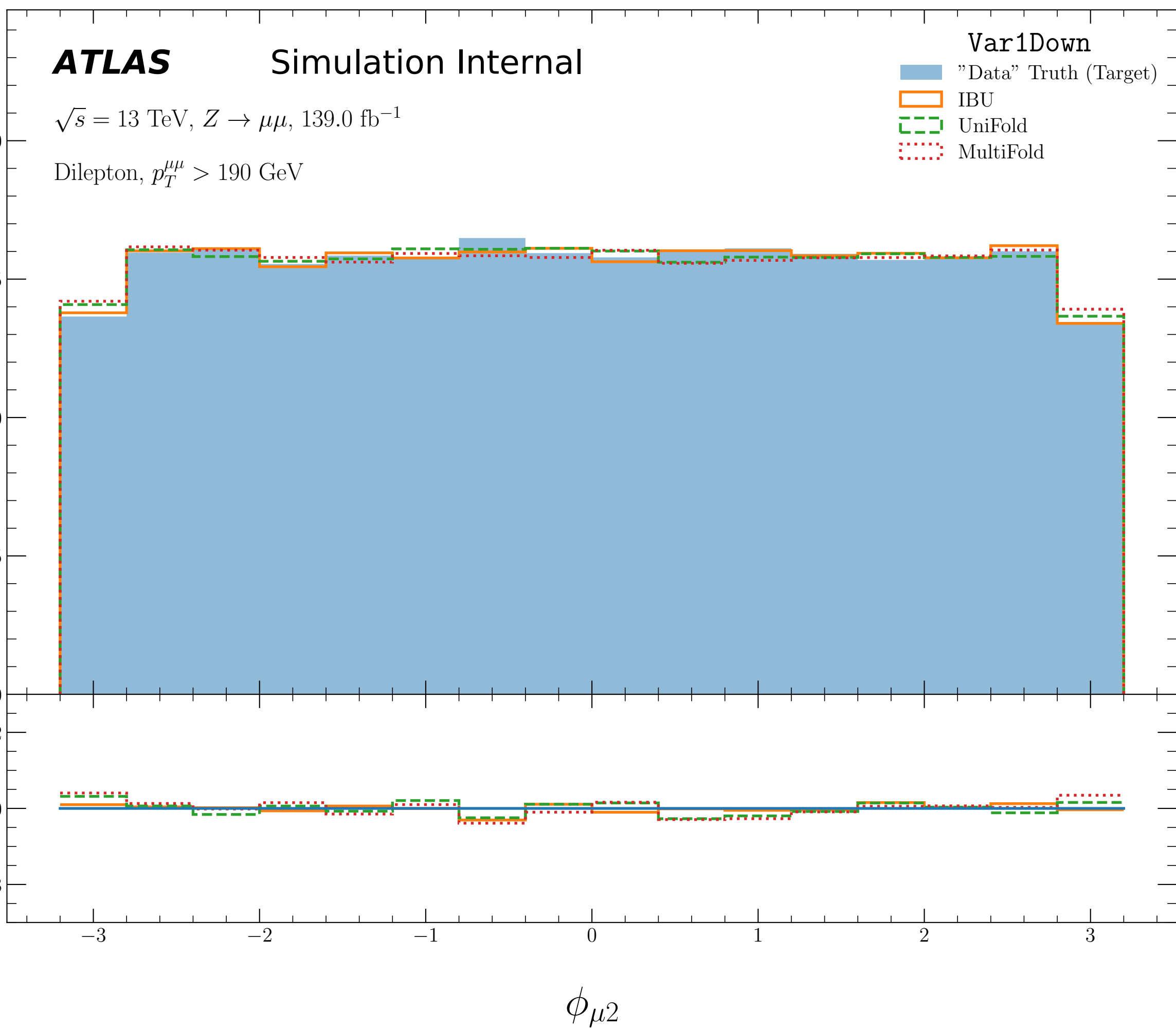
0

1

2

3

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var2Up

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

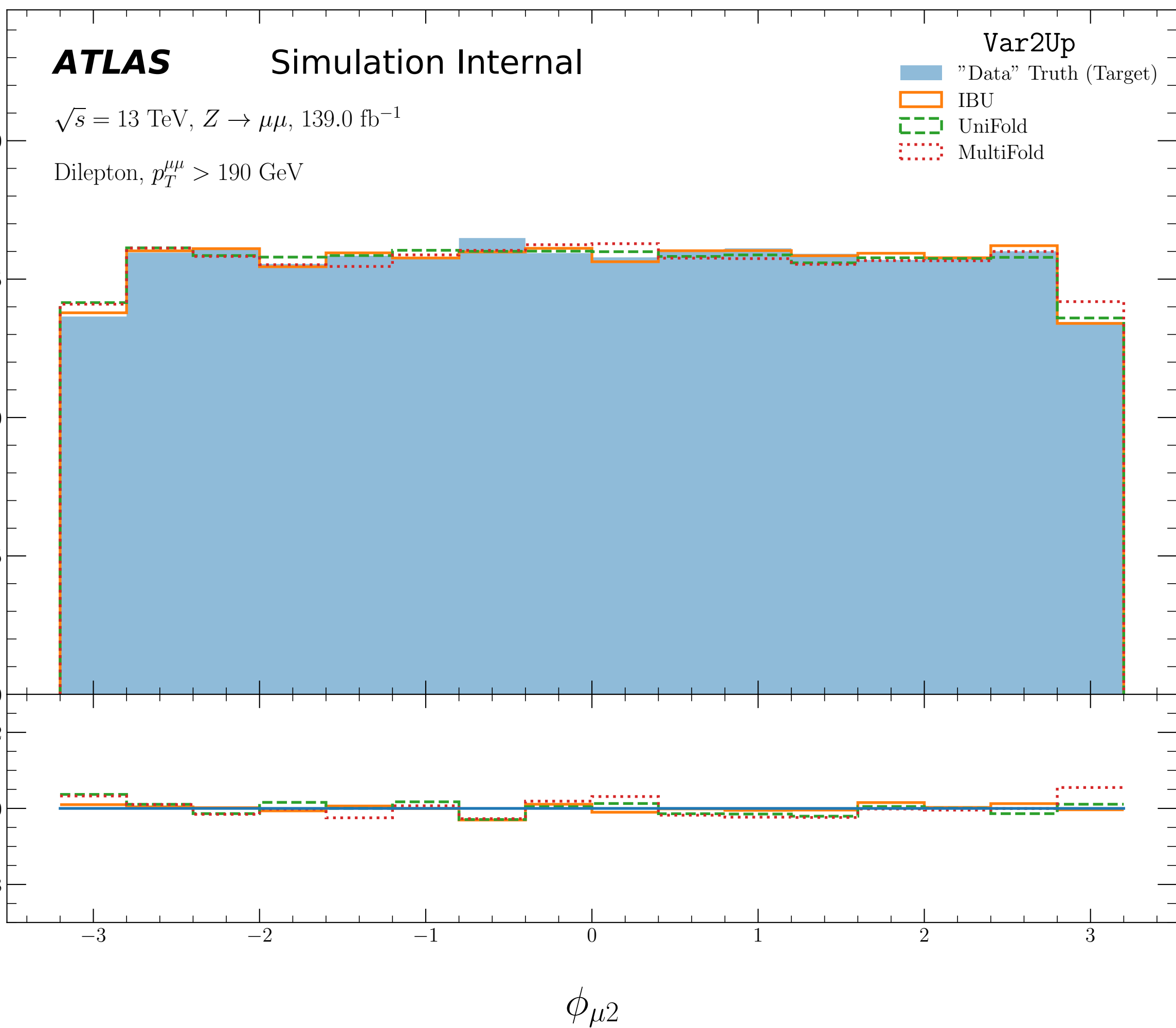
0

1

2

3

$\phi_{\mu 2}$



Events per bin (normalized)

**ATLAS**

Simulation Internal

$\sqrt{s} = 13 \text{ TeV}, Z \rightarrow \mu\mu, 139.0 \text{ fb}^{-1}$

Dilepton,  $p_T^{\mu\mu} > 190 \text{ GeV}$

Var2Down

- "Data" Truth (Target)
- IBU
- UniFold
- MultiFold

0.20

0.15

0.10

0.05

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

-3

-2

-1

0

1

2

3

$\phi_{\mu 2}$

