ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet n_{ch}

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet n_{ch}

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet m [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet m [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
200
400
600
800
1000

Leading track jet p_T [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.030
0.025
0.020
0.015
0.010
0.005
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
100
200
300
400
500

Subleading track jet p_T [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet y

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet y

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

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

Leading track jet ϕ

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

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

Subleading track jet ϕ

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_1

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet τ_1

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_2

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet τ_2

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_3

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet τ_3

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.0175
0.0150
0.0125
0.0100
0.0075
0.0050
0.0025
0.0000

Ratio to "Data" Truth

1.2
1.0
0.8

200 300 400 500 600 700 800 900 1000

$p_T^{\mu\mu}$ [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00

Ratio to "Data" Truth

1.2
1.0
0.8

−2
−1
0
1
2

$y_{\mu\mu}$

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.010
0.008
0.006
0.004
0.002
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
100
200
300
400
500
600
700
800

$p_T^{\mu 1}$ [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

50
100
150
200
250
300
350
400

$p_T^{\mu 2}$ [GeV]

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00

Ratio to "Data" Truth

1.2
1.0
0.8

−2
−1
0
1
2

$\eta_{\mu 1}$

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

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

$\phi_{\mu 1}$

ATLAS Simulation Internal

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

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

"Data" Truth (Target)
IBU
UniFold
MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\phi_{\mu 2}$