ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

0

5

10

15

20

25

30

35

40

Leading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

0

5

10

15

20

25

30

35

40

Leading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

0

5

10

15

20

25

30

35

40

Leading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

0

5

10

15

20

25

30

35

40

Leading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.16

0.14

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

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5

10

15

20

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30

35

Subleading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.16

0.14

0.12

0.10

0.08

0.06

0.04

0.02

0.00

Ratio to "Data" Truth

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1.0

0.8

0

5

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35

Subleading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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, MC16e

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Var1Down

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IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet n_{ch}

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.08

0.07

0.06

0.05

0.04

0.03

0.02

0.01

0.00

Ratio to "Data" Truth

1.2

1.0

0.8

0

10

20

30

40

50

60

70

Leading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00

Ratio to "Data" Truth

1.2
1.0
0.8

0
10
20
30
40
50
60
70

Leading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"Data" Truth (Target)

IBU

UniFold

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Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet m [GeV]

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$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

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Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.200

0.175

0.150

0.125

0.100

0.075

0.050

0.025

0.000

Ratio to "Data" Truth

1.2

1.0

0.8

0

5

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25

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35

40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

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0.125

0.100

0.075

0.050

0.025

0.000

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1.2

1.0

0.8

0

5

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35

40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
5
10
15
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25
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35
40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

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0.125
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0.075
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0.025
0.000

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1.0
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Subleading track jet m [GeV]

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Subleading track jet m [GeV]

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$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

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0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
5
10
15
20
25
30
35
40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
5
10
15
20
25
30
35
40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000

Ratio to "Data" Truth

1.2
1.0
0.8

0
5
10
15
20
25
30
35
40

Subleading track jet m [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.008

0.007

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0.002

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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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

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Ratio to "Data" Truth

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100

200

300

400

500

Subleading track jet p_T [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.030

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0.020

0.015

0.010

0.005

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Ratio to "Data" Truth

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0.8

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300

400

500

Subleading track jet p_T [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

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UniFold

MultiFold

Events per bin (normalized)

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Ratio to "Data" Truth

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400

500

Subleading track jet p_T [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

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0.025

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0.015

0.010

0.005

0.000

Ratio to "Data" Truth

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1.0

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300

400

500

Subleading track jet p_T [GeV]

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

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

Subleading track jet y

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

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MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

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

Subleading track jet y

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$\sqrt{s}$ =13 TeV, MC16e

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MPIDown

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1.2

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0.8

−3

−2

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0

1

2

3

Leading track jet ϕ

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

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0.20

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Leading track jet ϕ

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−3 −2 −1 0 1 2 3

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Subleading track jet ϕ

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$\sqrt{s}$ =13 TeV, MC16e

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RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_1

ATLAS Simulation Internal

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MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_1

ATLAS Simulation Internal

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MPIDown

"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, MC16e

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Var1Up

"Data" Truth (Target)

IBU

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Events per bin (normalized)

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Leading track jet τ_1

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Subleading track jet τ_1

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IBU

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Subleading track jet τ_1

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$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_2

ATLAS Simulation Internal

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Events per bin (normalized)

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Subleading track jet τ_2

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

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Var2Up

"Data" Truth (Target)

IBU

UniFold

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Events per bin (normalized)

Ratio to "Data" Truth

Subleading track jet τ_2

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events

Events per bin (normalized)

Ratio to "Data" Truth

Leading track jet τ_3

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events

Ratio to "Data" Truth

Leading track jet τ_3

ATLAS Simulation Internal

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$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

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IBU

UniFold

MultiFold

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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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

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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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

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0.0175

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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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$y_{\mu\mu}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

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MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.012

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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

50

100

150

200

250

300

350

400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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

50 100 150 200 250 300 350 400

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

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.0175

0.0150

0.0125

0.0100

0.0075

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0.0025

0.0000

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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Down

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\eta_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\phi_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIUp

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

MPIDown

"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, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Up

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

Ratio to "Data" Truth

$\phi_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var1Down

"Data" Truth (Target)

IBU

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MultiFold

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2

3

$\phi_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

Var2Up

"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

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0

1

2

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ATLAS Simulation Internal

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Var2Down

"Data" Truth (Target)

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2

3

$\phi_{\mu 1}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenUp

"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

$\phi_{\mu 2}$

ATLAS Simulation Internal

$\sqrt{s}$ =13 TeV, MC16e

$Z \to \mu\mu$+jets, $p_T^{\mu\mu} > 200$ GeV

RenDown

"Data" Truth (Target)

IBU

UniFold

MultiFold

Events per bin (normalized)

0.20

0.15

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0.00

Ratio to "Data" Truth

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$\phi_{\mu 2}$

ATLAS Simulation Internal

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MPIUp

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MultiFold

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−3 −2 −1 0 1 2 3

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$\phi_{\mu 2}$