DOUBLE PARTON UW MADISON CDF

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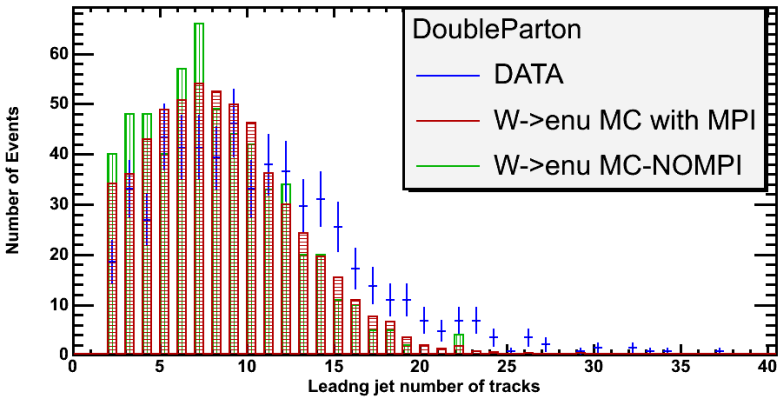
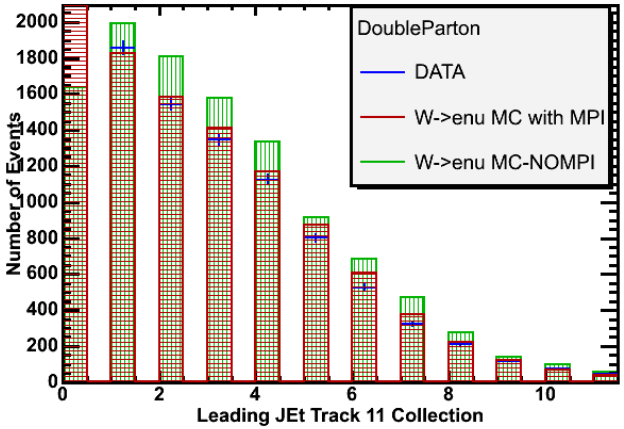
EVENT SELECTION

- Only events with Electron Track 11 are chosen
- L5 Corrected JetEt >10 GeV and $|\eta|<2$
- Only Events with Number of Tracks(any algorithm tracks) in both Leading and Next-to-Leading Jets are considered
- Only Leading Jet Tracks of algorithm 11 are studied
- Only Two Track11 tracks are considered in Both Leading and Next-to-Leading Jet

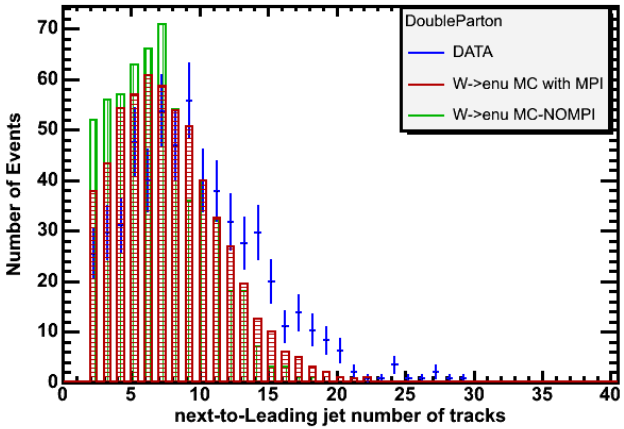
JET TRACKS

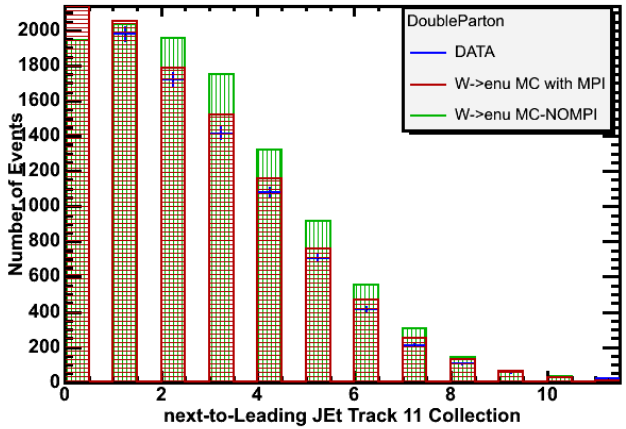




1. As specified in the Slide 2 the two set of Number-Tracks-in-the-Jet cuts applied
   - Plot on Left- Both Leading & Next-to-Leading Jet have Number-of-Any-algorithm-Tracks>=2
   - Plot on Right- Both Leading & Next-to-Leading Jet have ONLY Track 11 Tracks
2. Both Plots are made before Applying the Cut on the Number of Track 11Tracks in Both the jets.
3. Zero bin correspond to Jet with No Track 11 but all other Algorithm Tracks

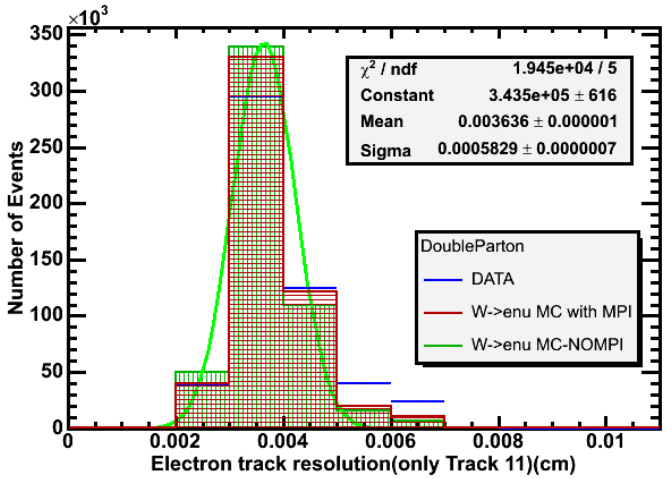
JET TRACKS CONTD…



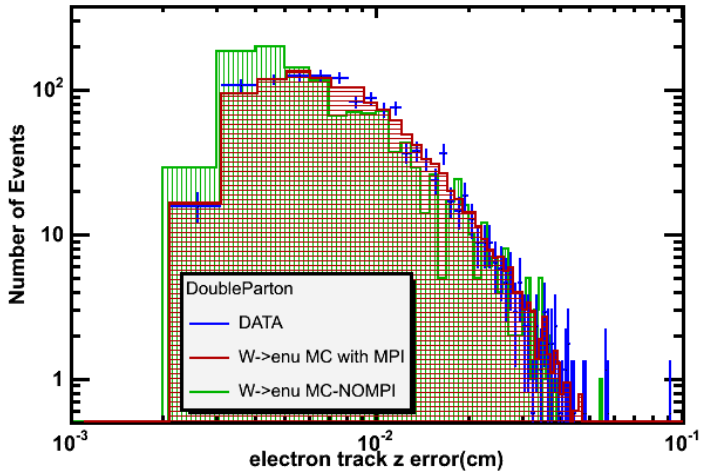


Same Plots as Previous Slide ,but For the Next-to-Leading Jet

ELECTRON TRACK Z ERROR



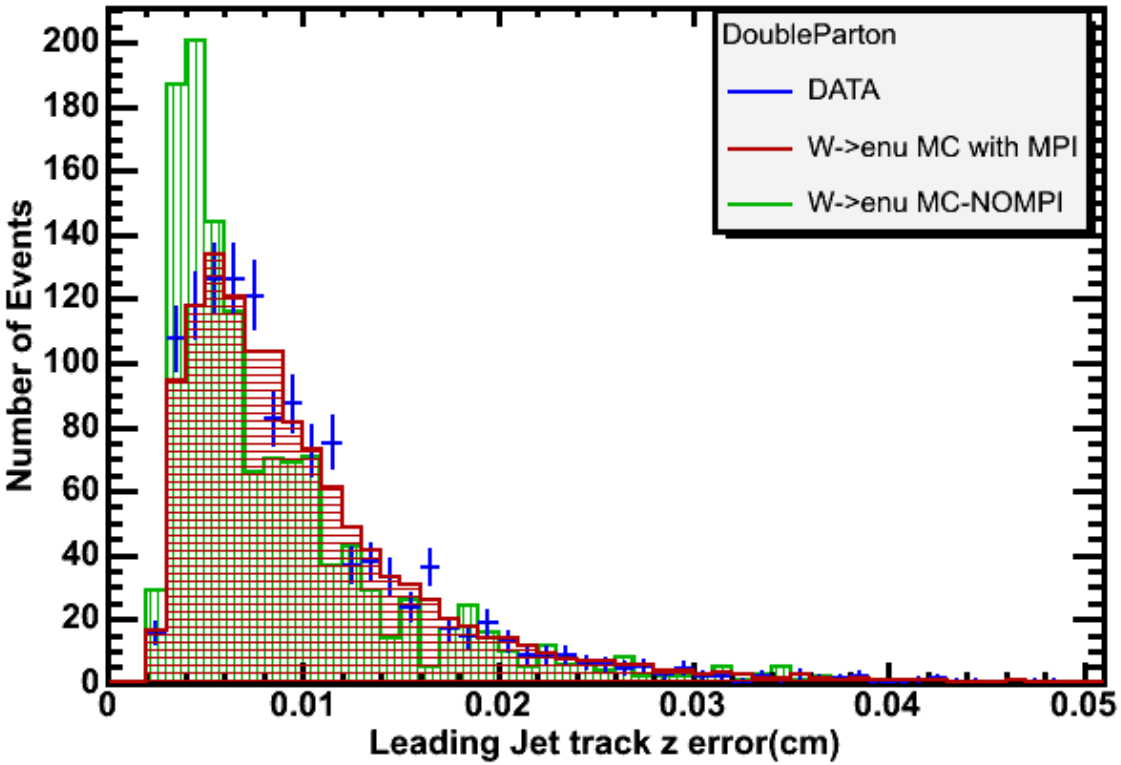
Linear scale



Log-Log Scale

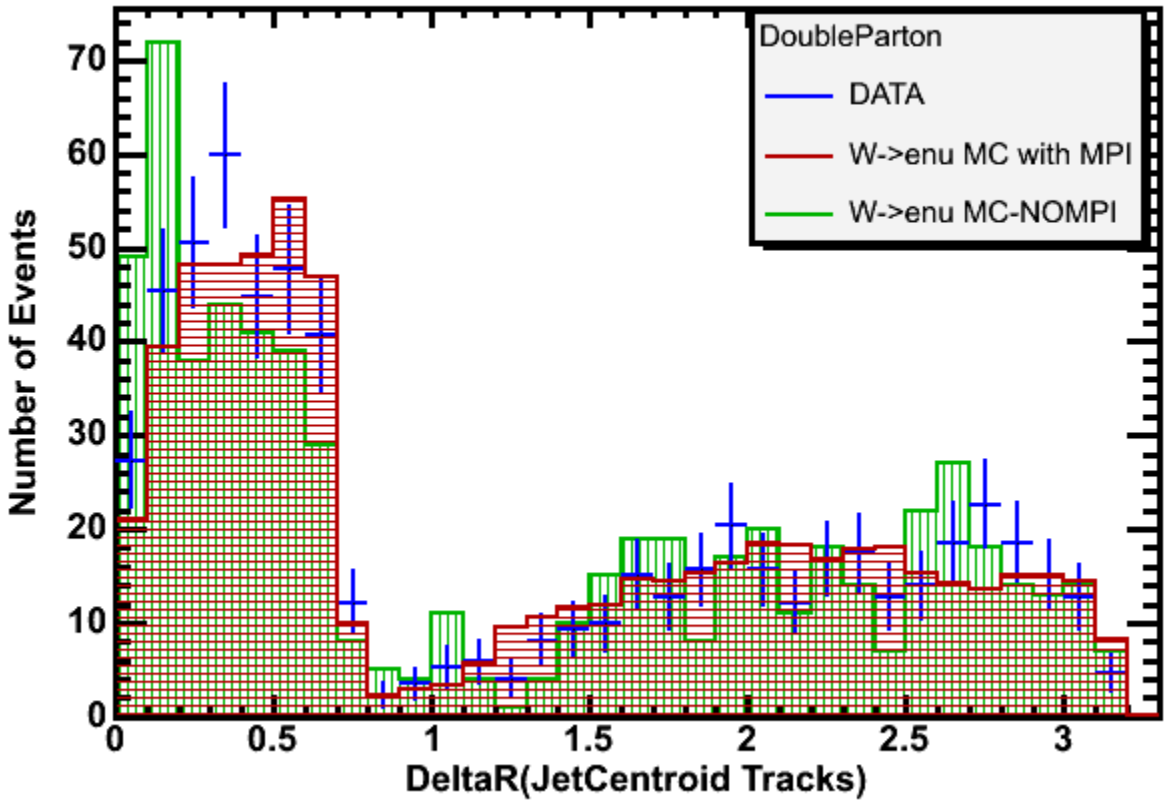
- Electron Track Z error range [20μm - 70μm] which is a far better error than Jet Track Error (Slide 6)
- The Log-Log plots drops smoothly as expected

JET TRACK Z ERROR

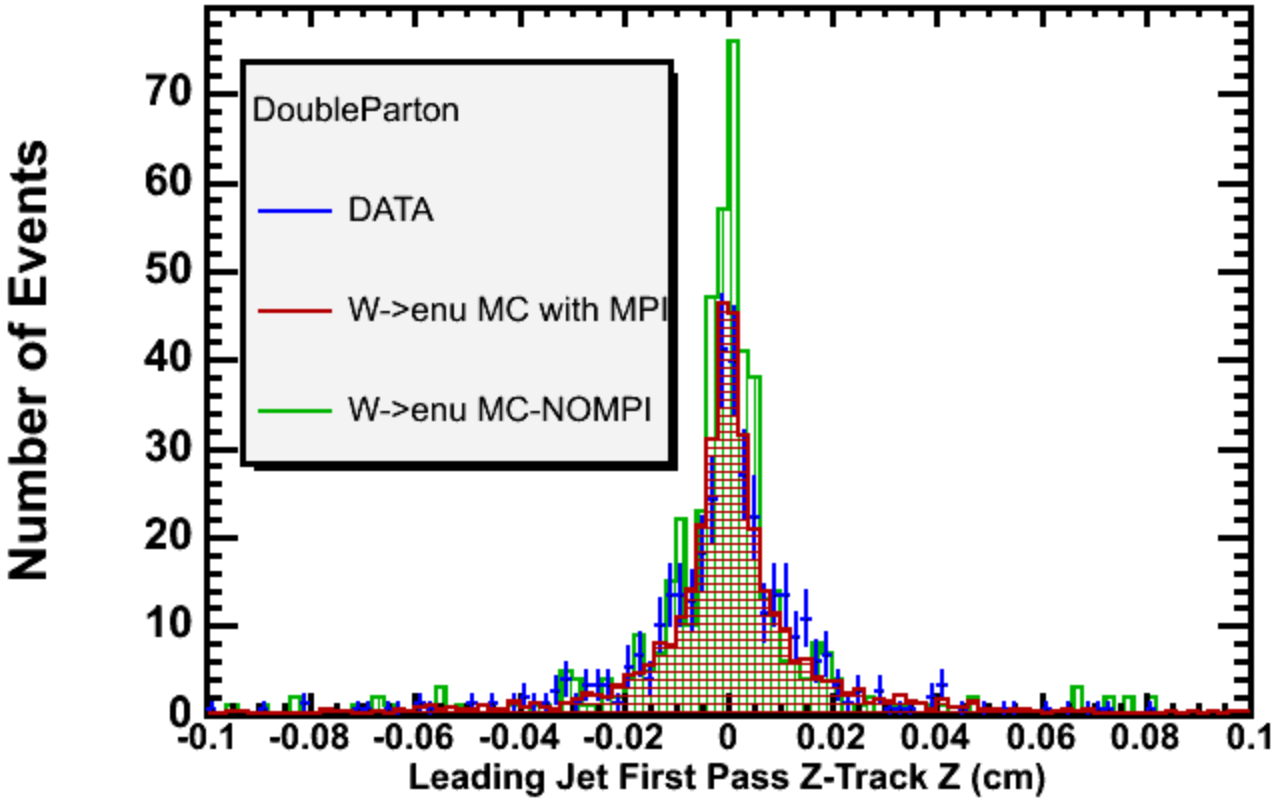


- The minimum Jet Track Z error is same as Electron track z error ~ 20μm
- The maximum goes till ~ 300μm
- Is it interesting to point out that ΔZ(Jet-Ele) is dominated the Jet Track Z error

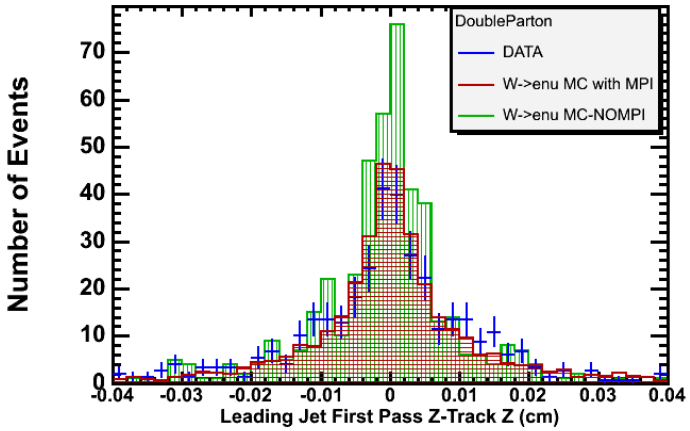
ΔR(JET CENTROID- TRACKS IN THE JET)

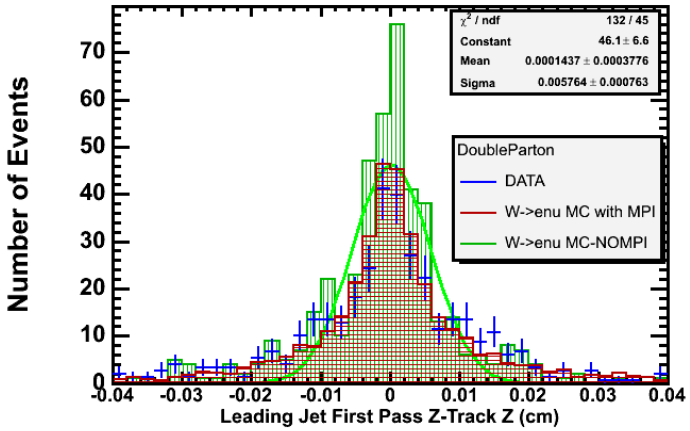


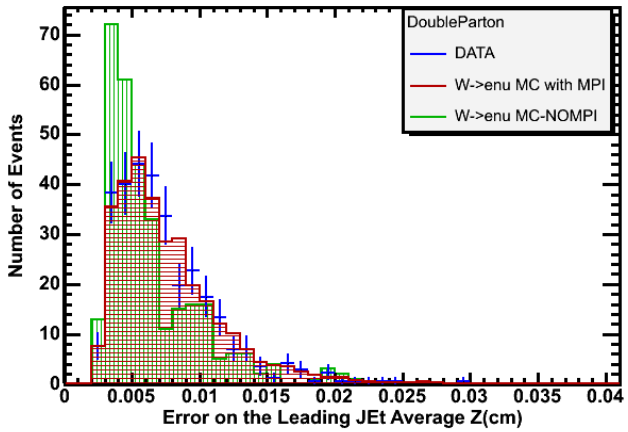
ΔZ(LEADING JET Z-TRACK Z)

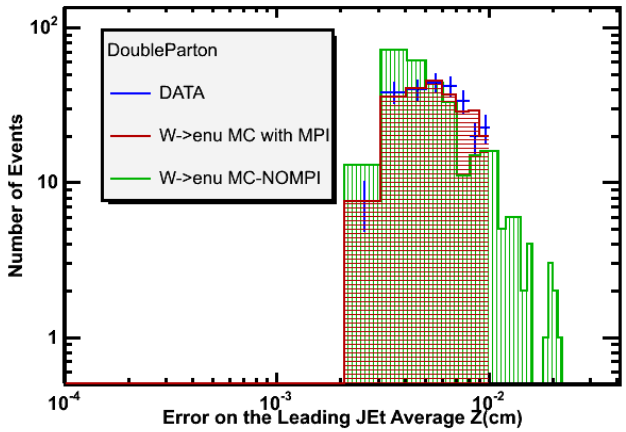


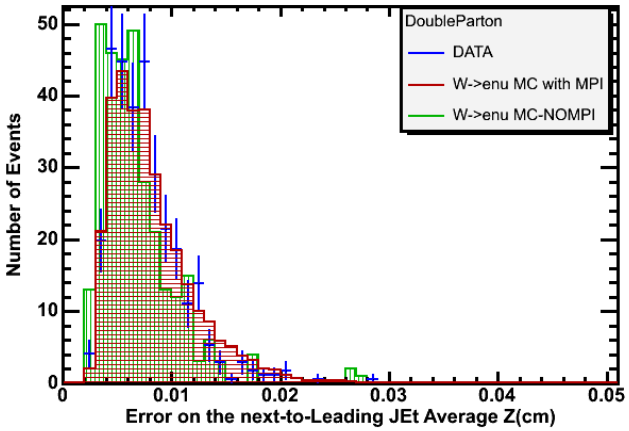
1. Leading Jet First Pass Z- Track Z error Weighted Jet Average ,that's has been iterated once
2. Track Z-Tracks that were considered in the Average Calculation above and have been assigned to the Jet at the Ntuple Level

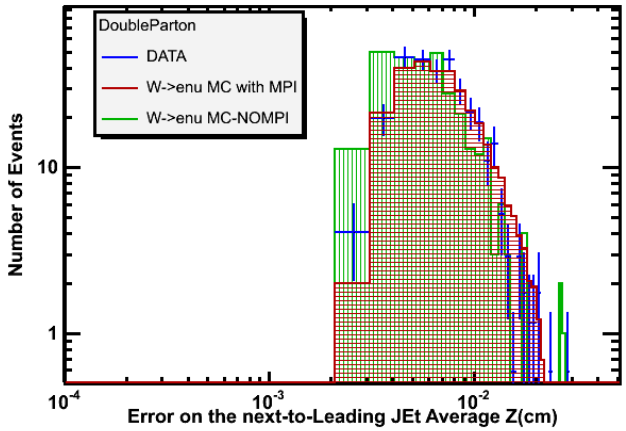

DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Leading Jet First Pass Z-Track Z (cm)

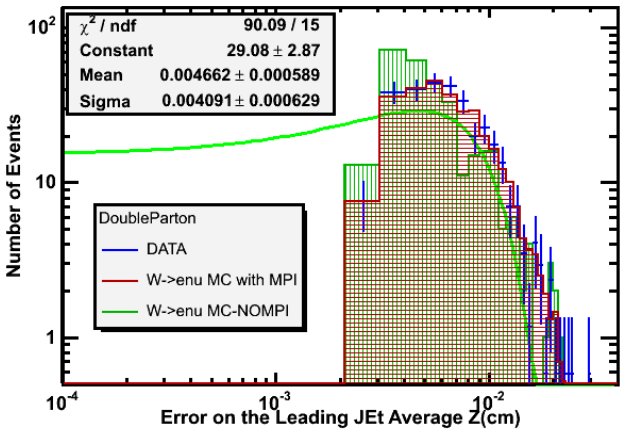

χ² / ndf 132 / 45
Constant 46.1 ± 6.6
Mean 0.0001437 ± 0.0003776
Sigma 0.005764 ± 0.000763
DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Leading Jet First Pass Z-Track Z (cm)

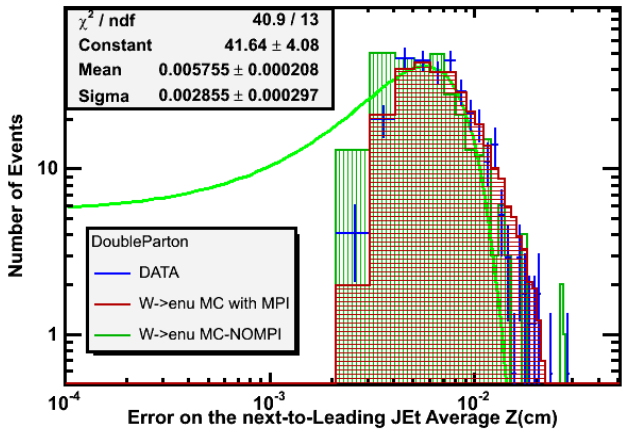

DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the Leading JEt Average Z(cm)
0
10
20
30
40
50
60
70
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04

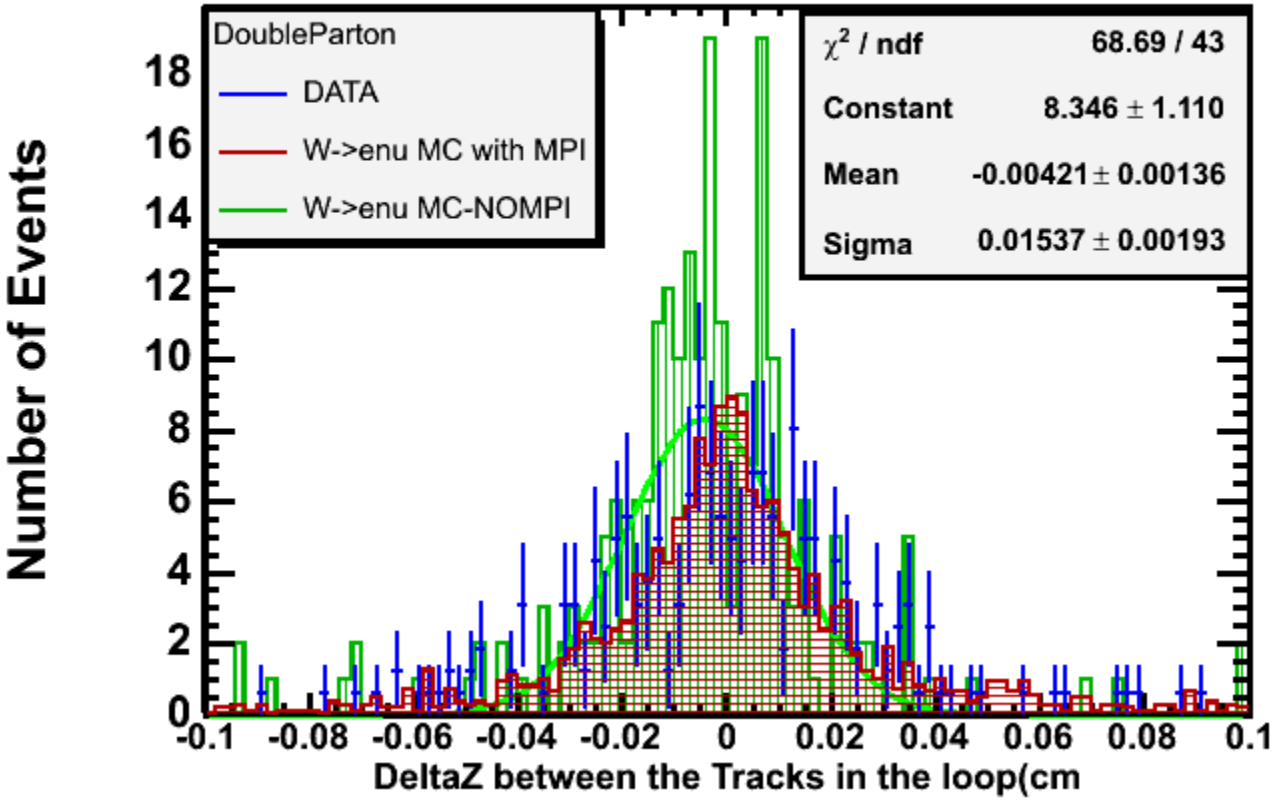

DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the Leading JEt Average Z(cm)
1
10
10^2
10^{-4}
10^{-3}
10^{-2}


DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the next-to-Leading JEt Average Z(cm)


DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the next-to-Leading JEt Average Z(cm)


χ^2 / ndf 90.09 / 15
Constant 29.08 ± 2.87
Mean 0.004662 ± 0.000589
Sigma 0.004091 ± 0.000629
DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the Leading JEt Average Z(cm)


χ^2 / ndf 40.9 / 13
Constant 41.64 ± 4.08
Mean 0.005755 ± 0.000208
Sigma 0.002855 ± 0.000297
DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
Number of Events
Error on the next-to-Leading JEt Average Z(cm)


DoubleParton
DATA
W->enu MC with MPI
W->enu MC-NOMPI
χ^2 / ndf 68.69 / 43
Constant 8.346 ± 1.110
Mean -0.00421 ± 0.00136
Sigma 0.01537 ± 0.00193
Number of Events
DeltaZ between the Tracks in the loop(cm
0
2
4
6
8
10
12
14
16
18
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

CONCLUSIONS