Group Meeting Update

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Updates

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- Purity distribution of correct charge has been improved with different parameterization on α and d_0
- α and d_0 and cut criteria is shown.
- Change in parameterization for offset significance.
  "deviation $>$ 25*sqrt(angle)+1.0"
  $\rightarrow$ "deviationD0 $>$ 10.*sqrt(angle)+1.5"
- Comparison of small and large detector geometries.

Charge Purity Distribution (Small and Large)

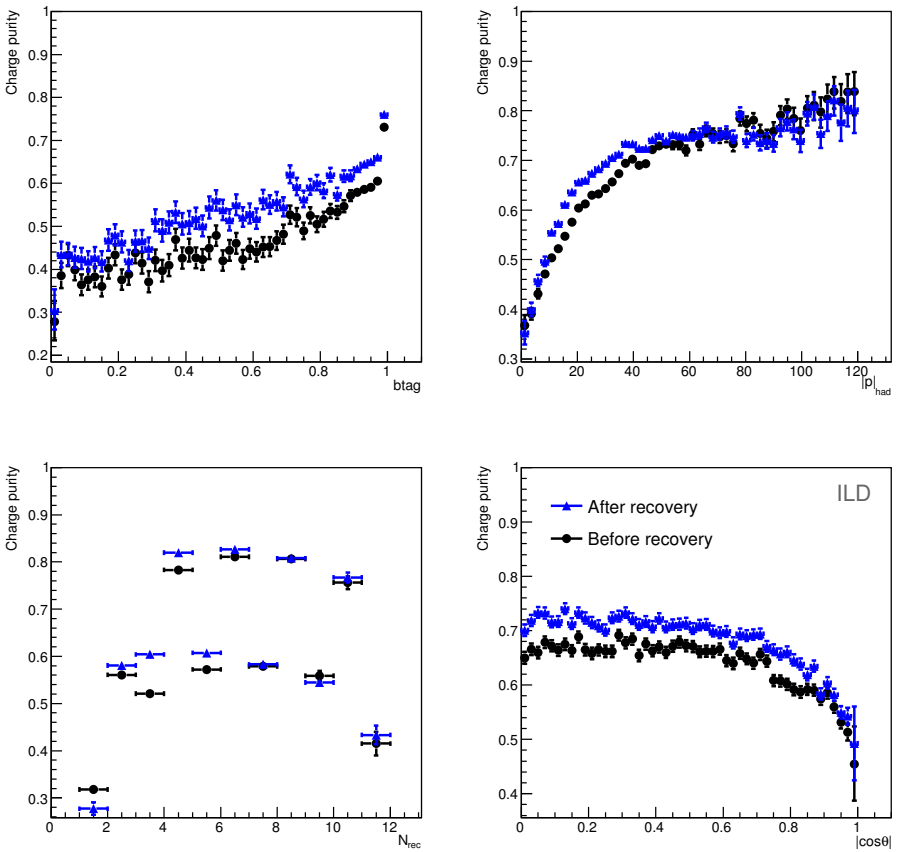


Figure: small

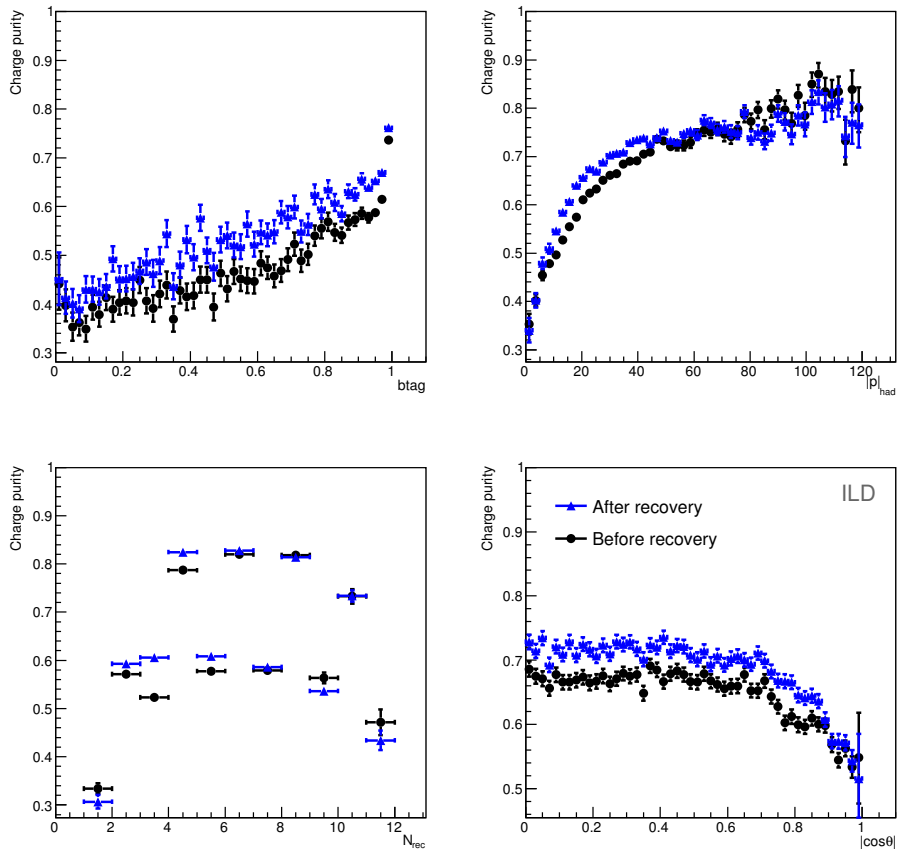


Figure: large

Charge Purity Distribution (Small and Large)

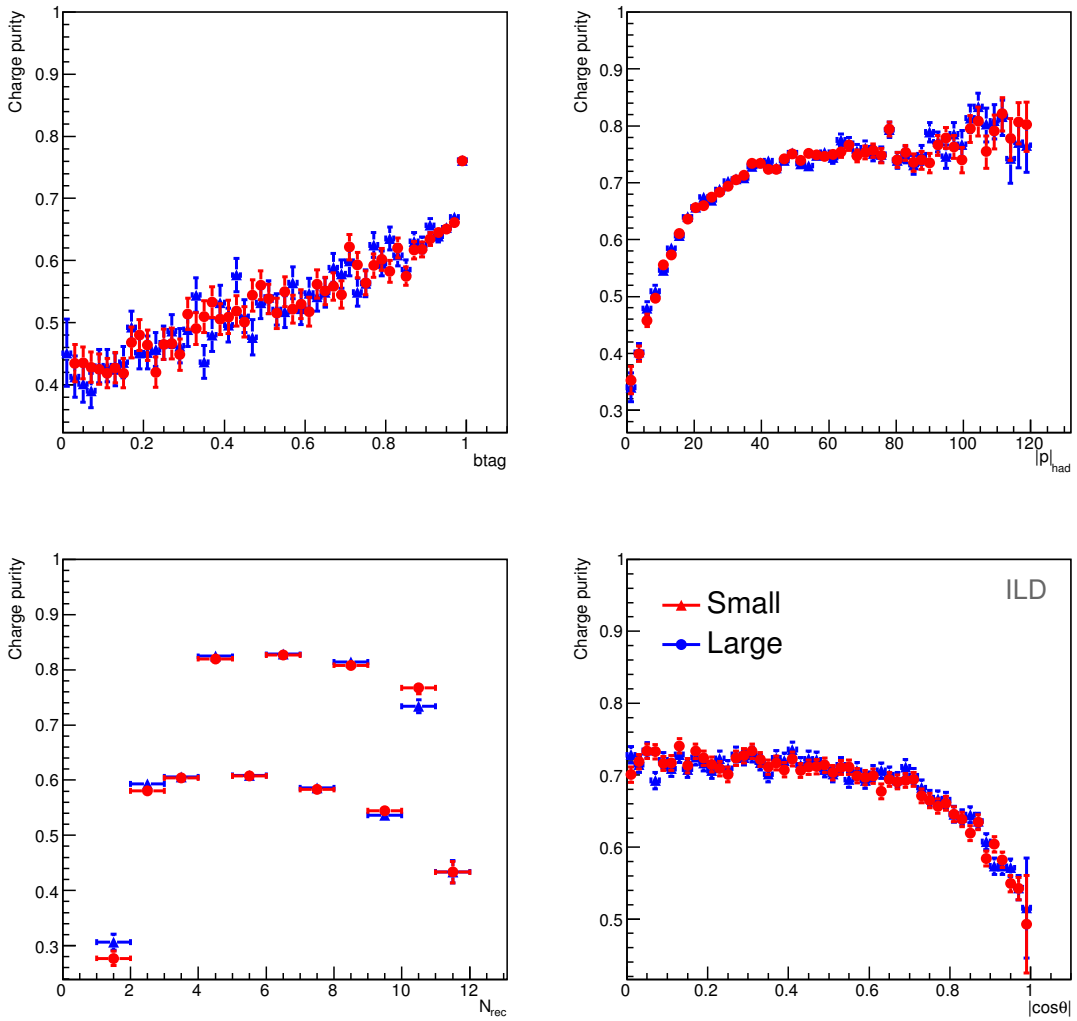


Figure: Large and small after recovery

Charge Purity (Large)

========== Before Recovery ==========
Total events: 73579
Correct charge: 59664 of 91847 (64.9602%)
========== After Recovery ==========
Correct charge: 63429 of 91847 (69.0594%)

Confirmation of 5% rise in purity selection efficiency with 4,000 more charged particles. Odd number of charged particle comes from either MC not producing daughter particle or fail to reconstruct b quark.

$$73579 \times 2 - \underbrace{27059}_{b \text{ reco } 0} - \underbrace{28252}_{\overline{b} \text{ reco } 0} = 91847$$

Charge Purity (Small)

========== Before Recovery ==========
Total events: 85056
Correct charge: 68332 of 106128 (64.3864%)
========== After Recovery ==========
Correct charge: 73017 of 106128 (68.8009%)

Track Distribution (Large)

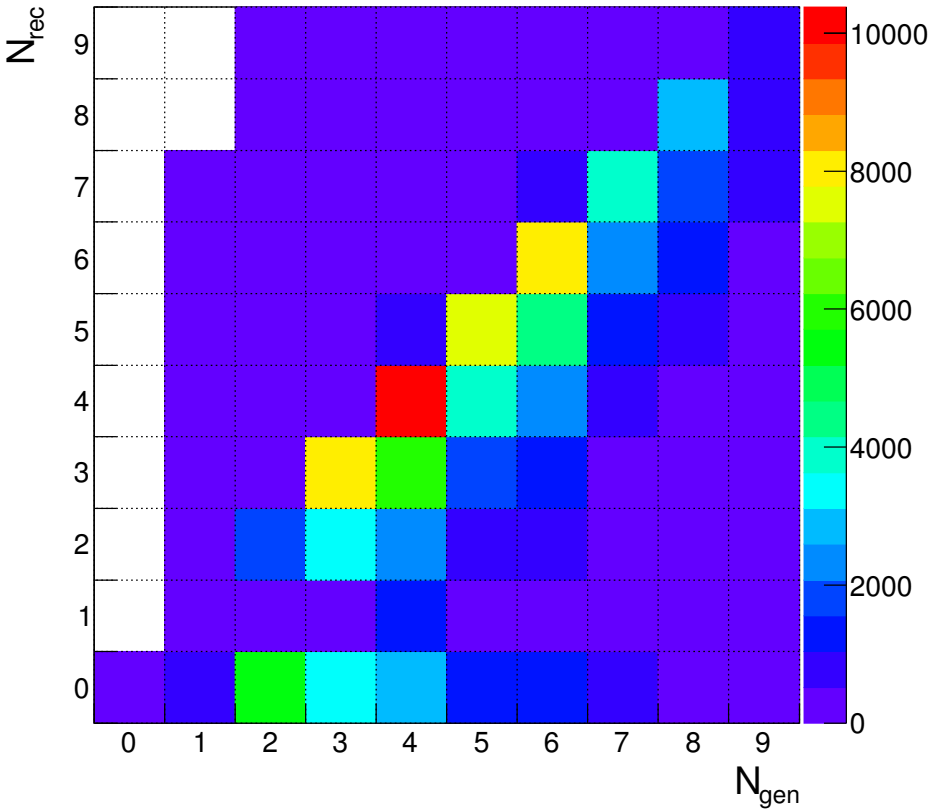


Figure: number of tracks before VR

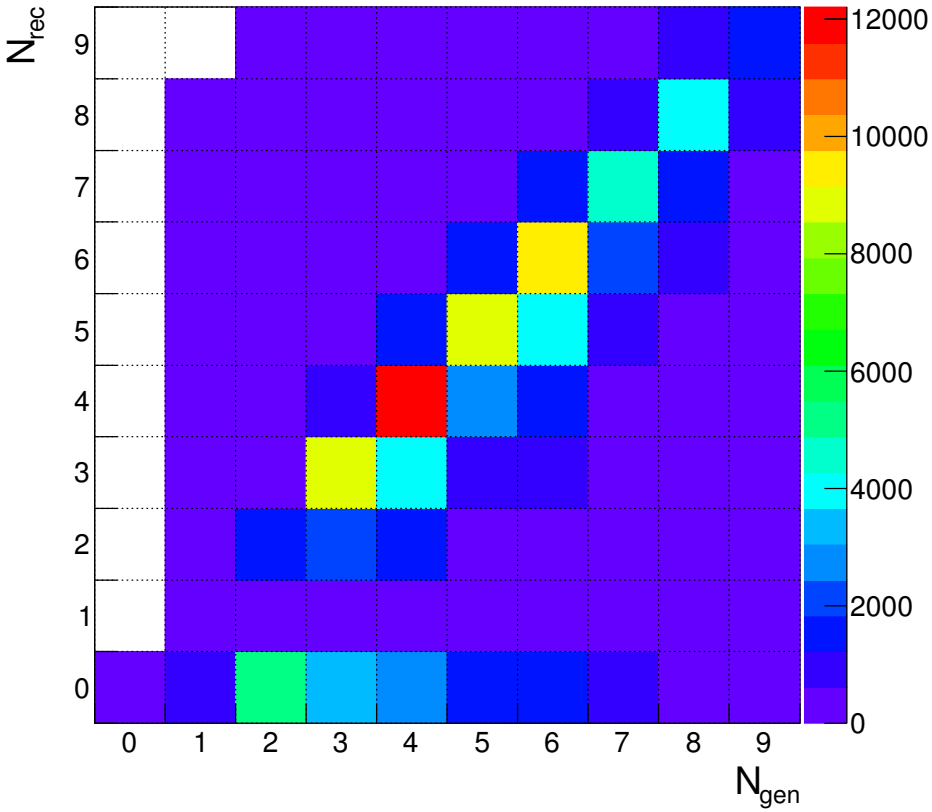


Figure: number of tracks after VR

d0 and α

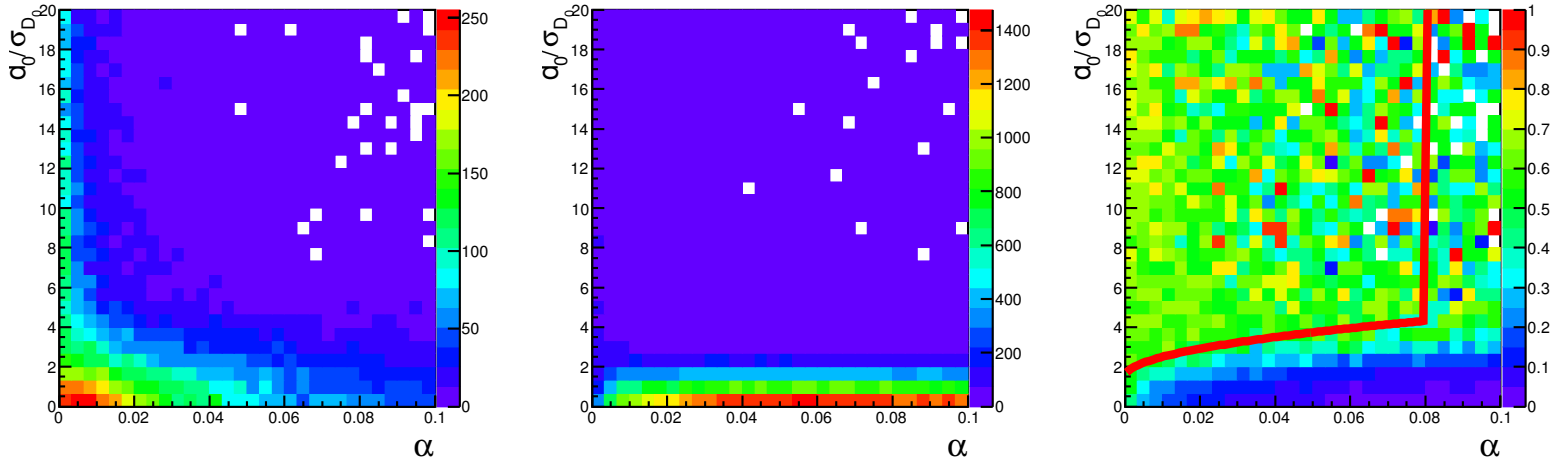


Figure: d0 and α LARGE

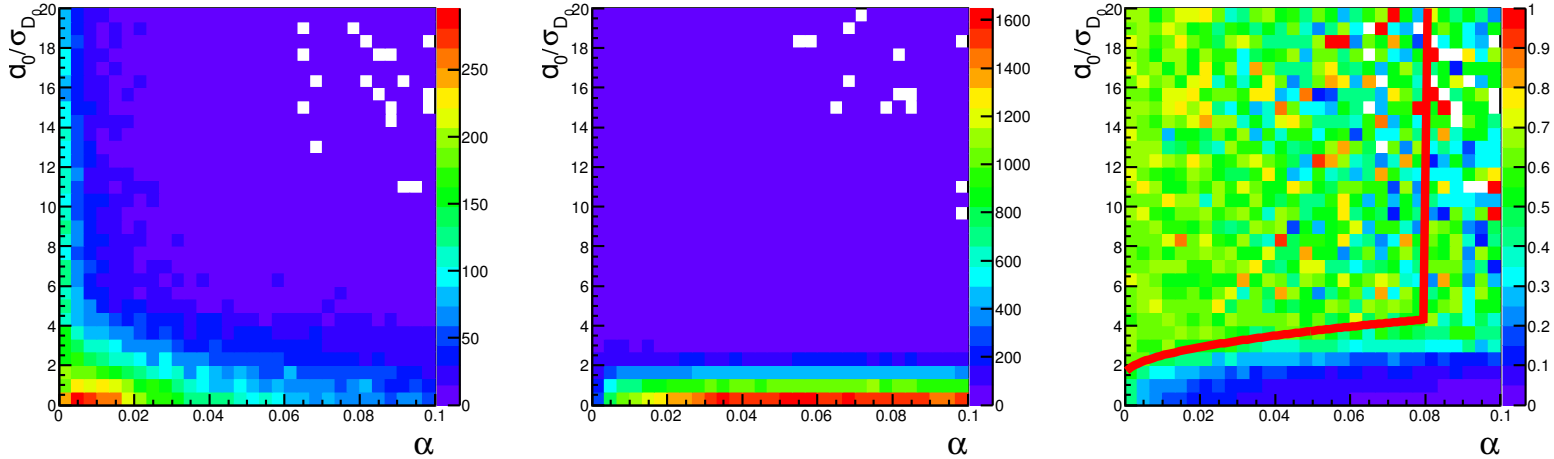
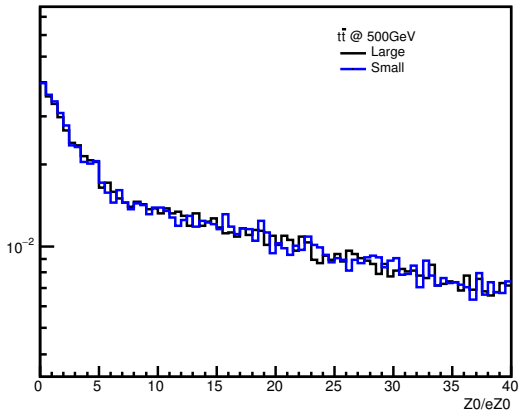


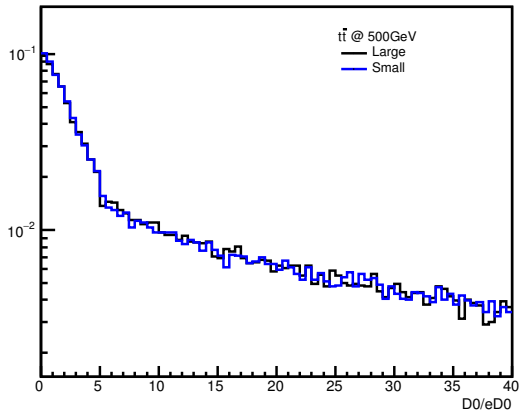
Figure: d0 and α SMALL

Missed and Background D0 and Z0

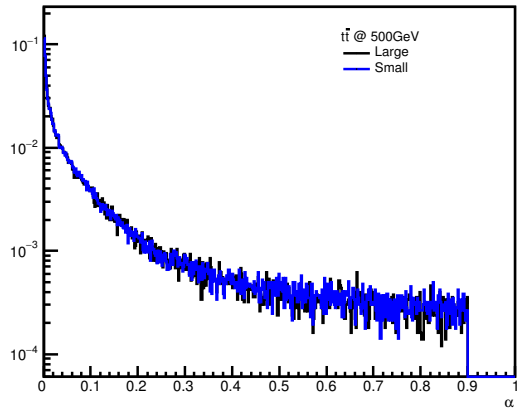
missed_sigZ0



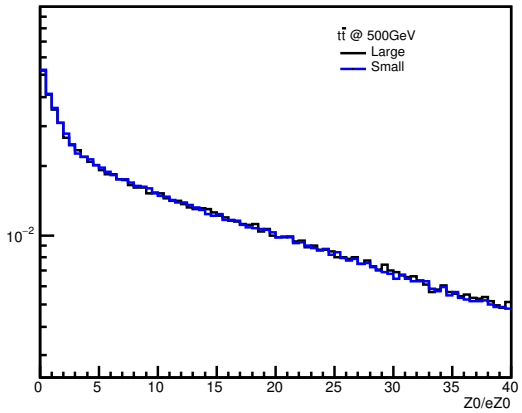
missed_sigD0



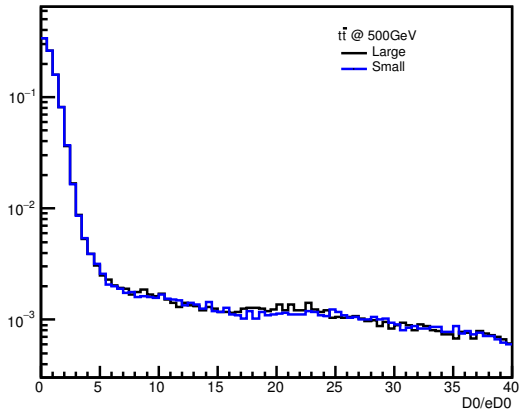
missed_angle



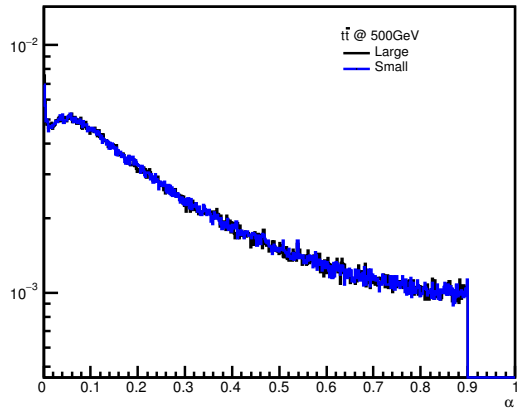
bkg_sigZ0



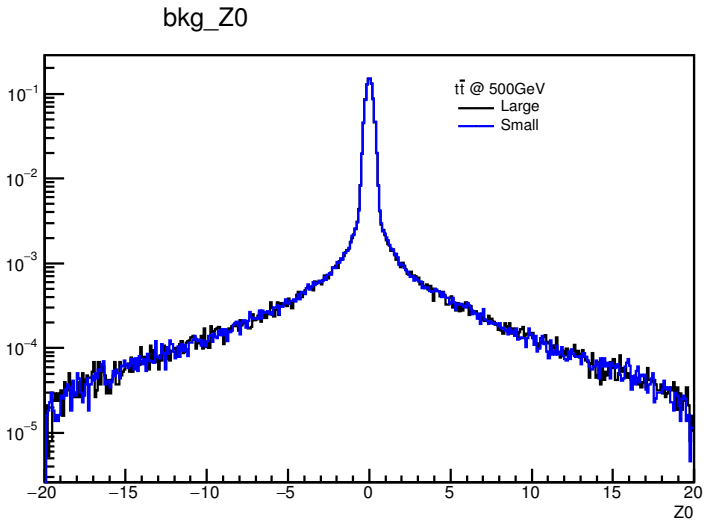
bkg_sigD0

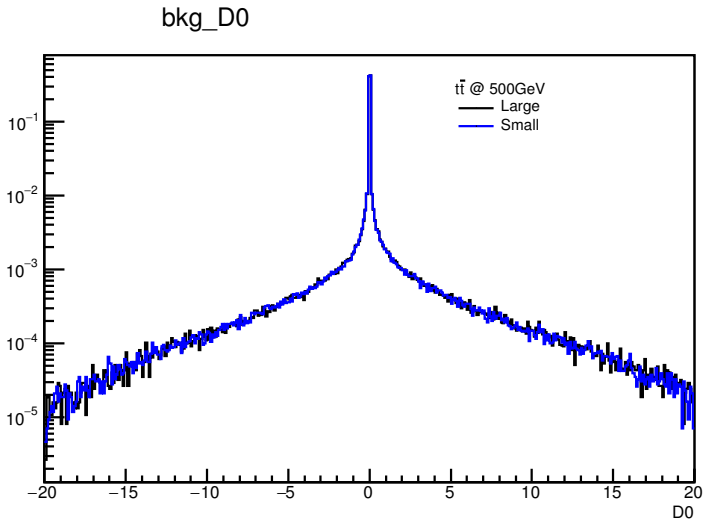


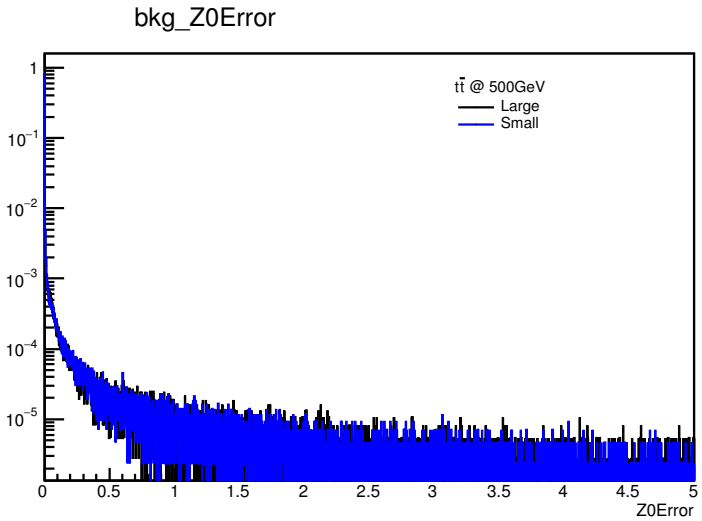
bkg_angle

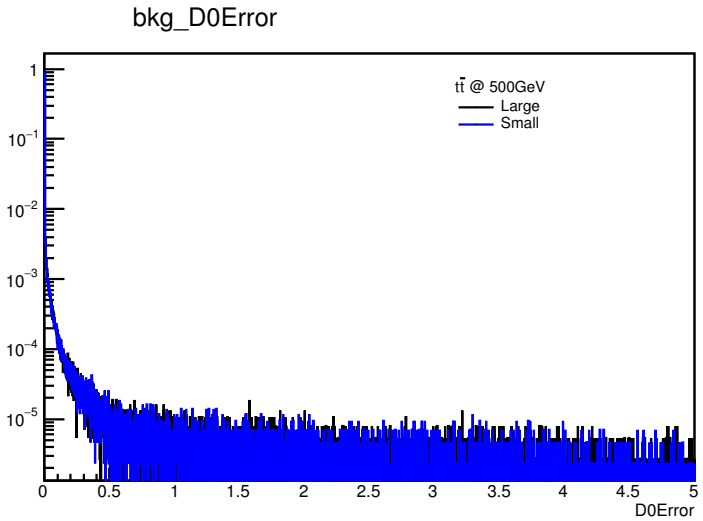


Missed and Background D0 and Z0

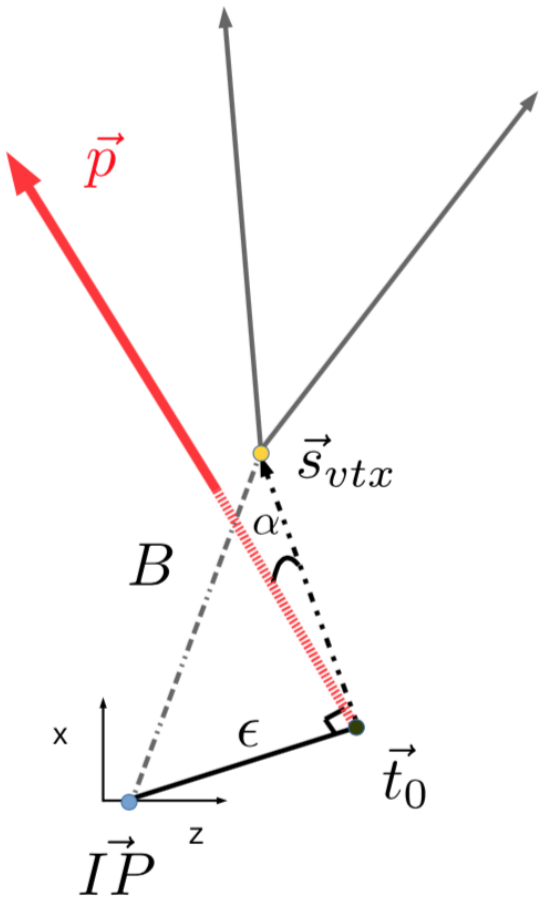








Alpha



Lost Recovered and Tracks (large)

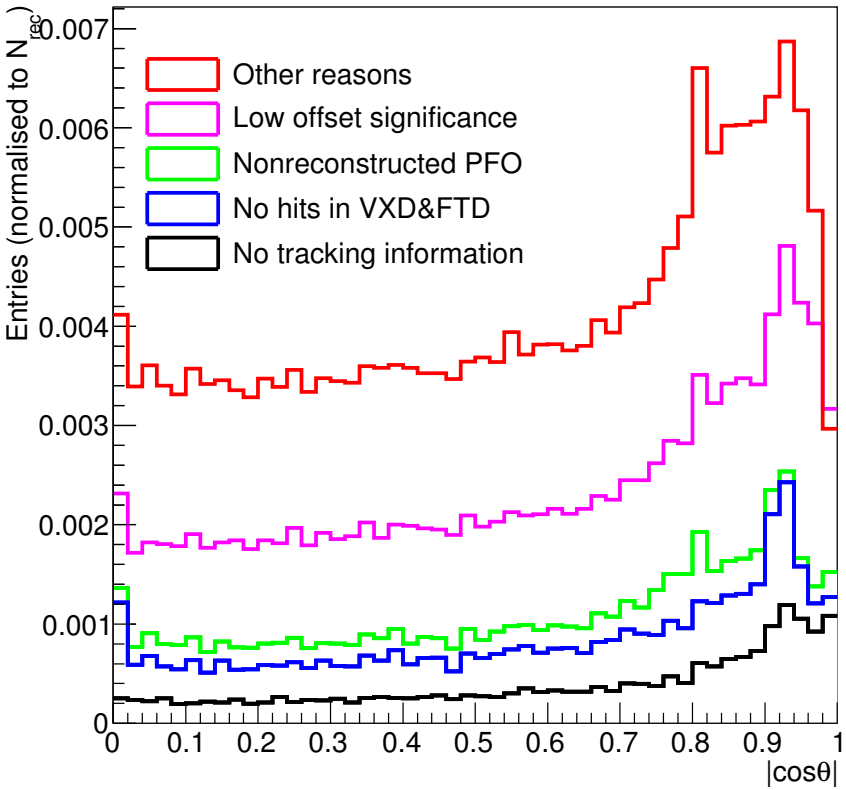


Figure: Lost Tracks before VR

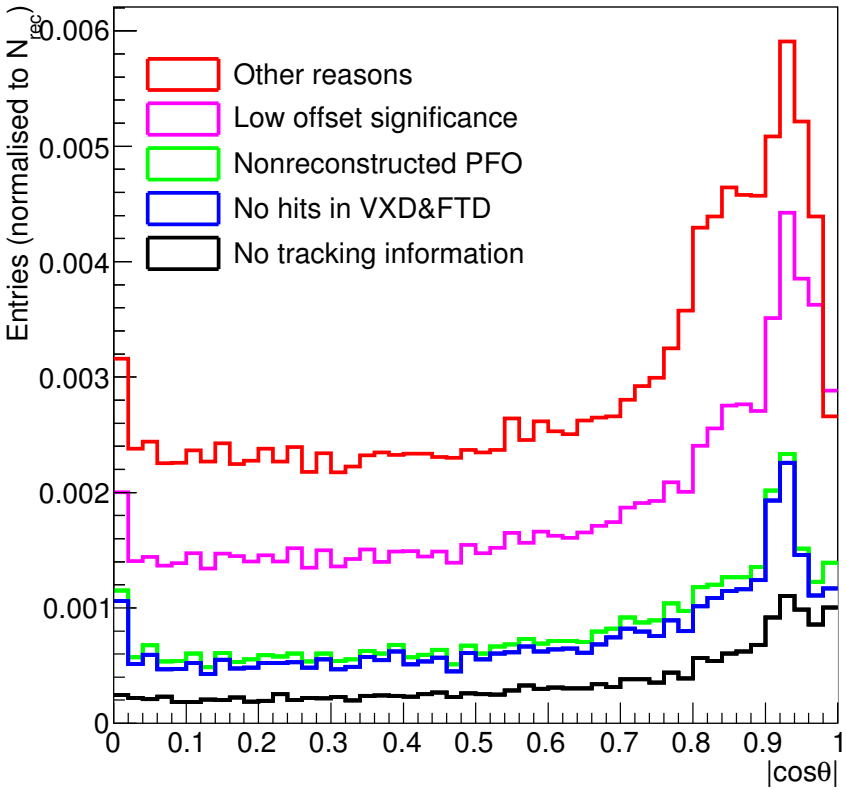


Figure: Lost Tracks after VR

Lost Recovered and Tracks (small)

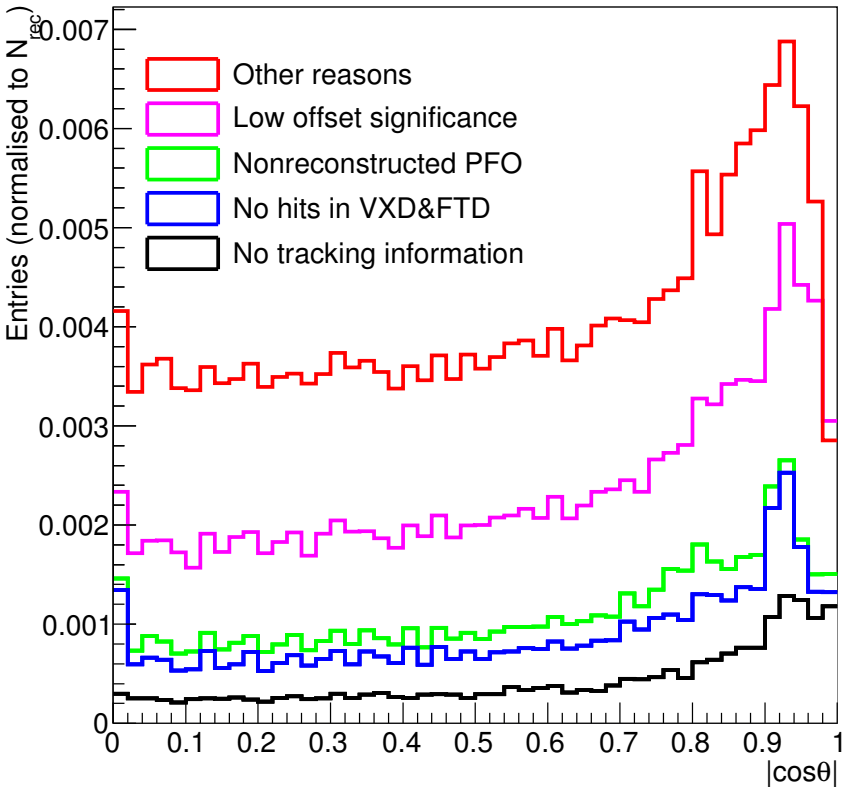


Figure: Lost Tracks before VR

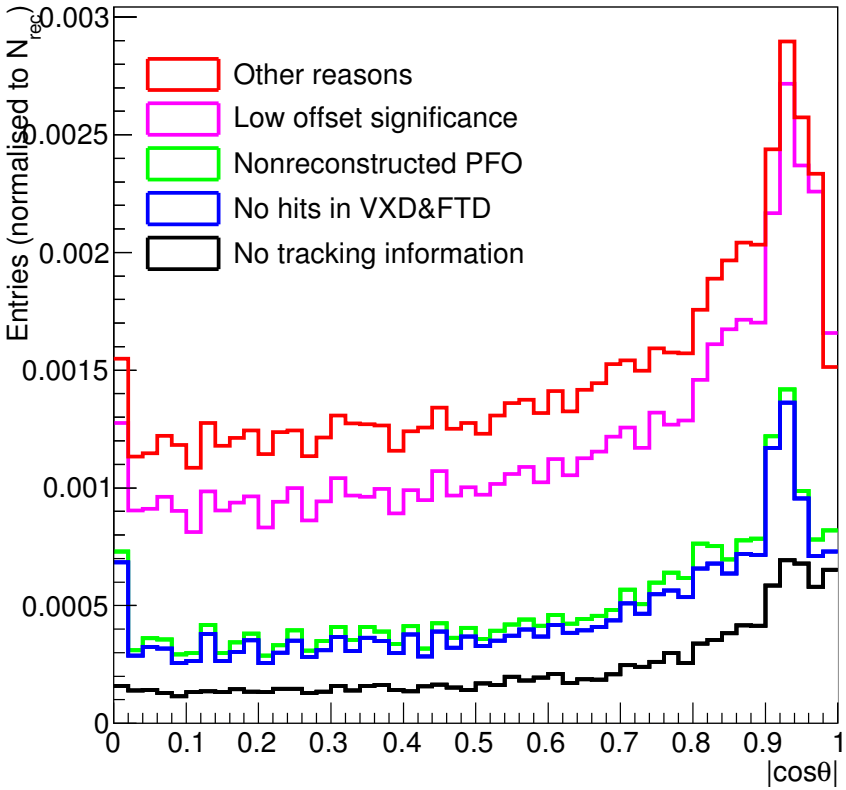


Figure: Lost Tracks after VR

Top Polar Angle

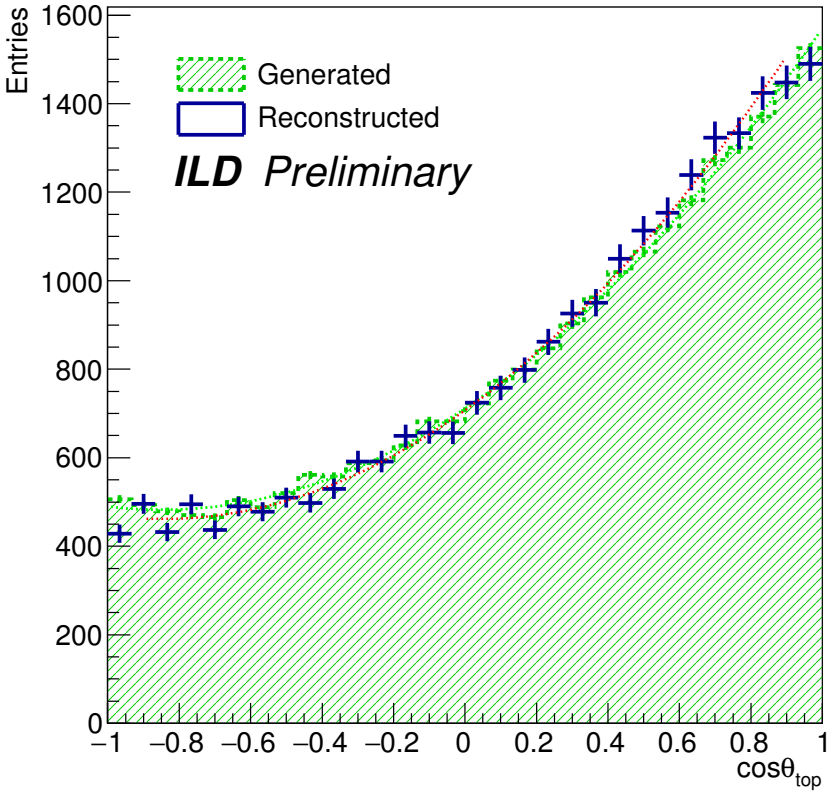


Figure: Top polar angle (small)

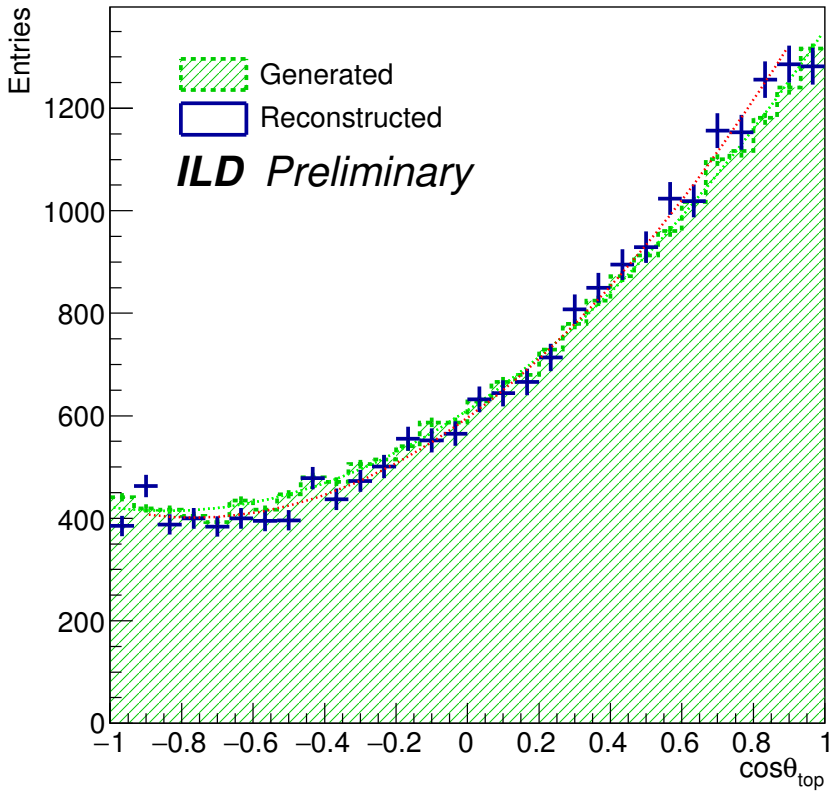


Figure: Top polar angle (large)

b Polar Angle

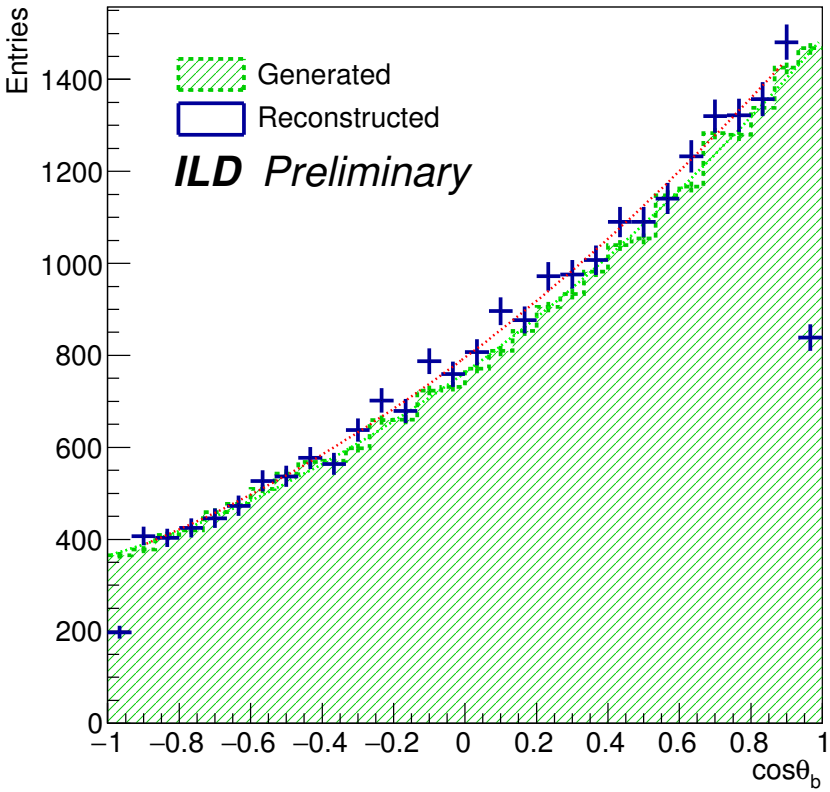


Figure: b polar angle (small)

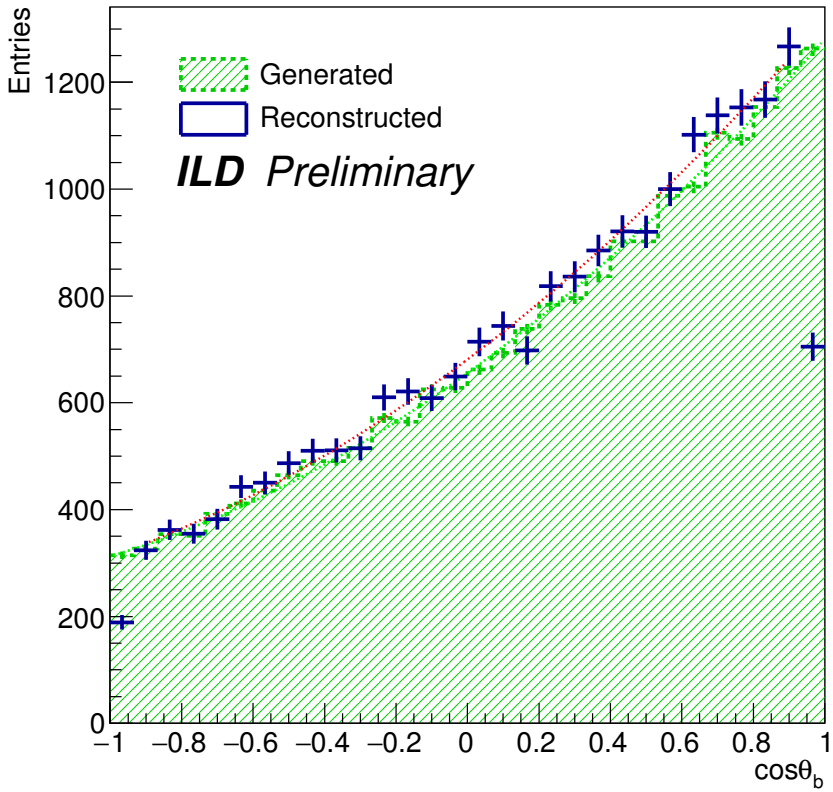


Figure: b polar angle (large)

Summary

Conclusion

- Comparison of Small and Large sample
- Make sure α is correctly reconstructed. (Check d0, z0, and momentum of associated particles.)
- Resolving tech issue with VR.