$B^+ \to \rho^+\rho^0$ status

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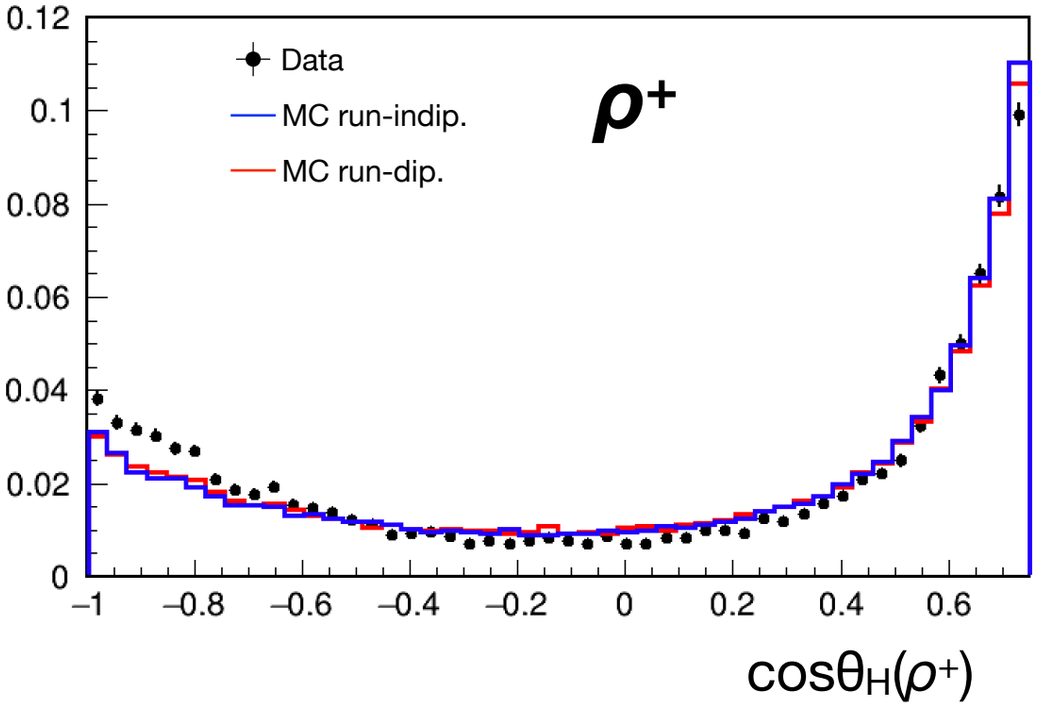
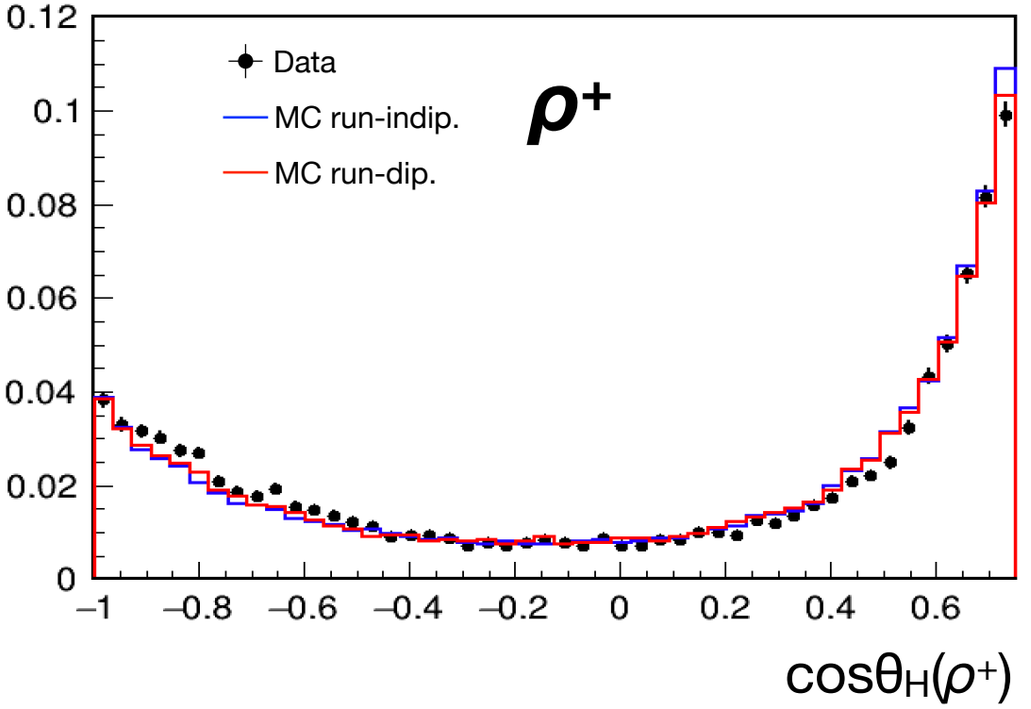
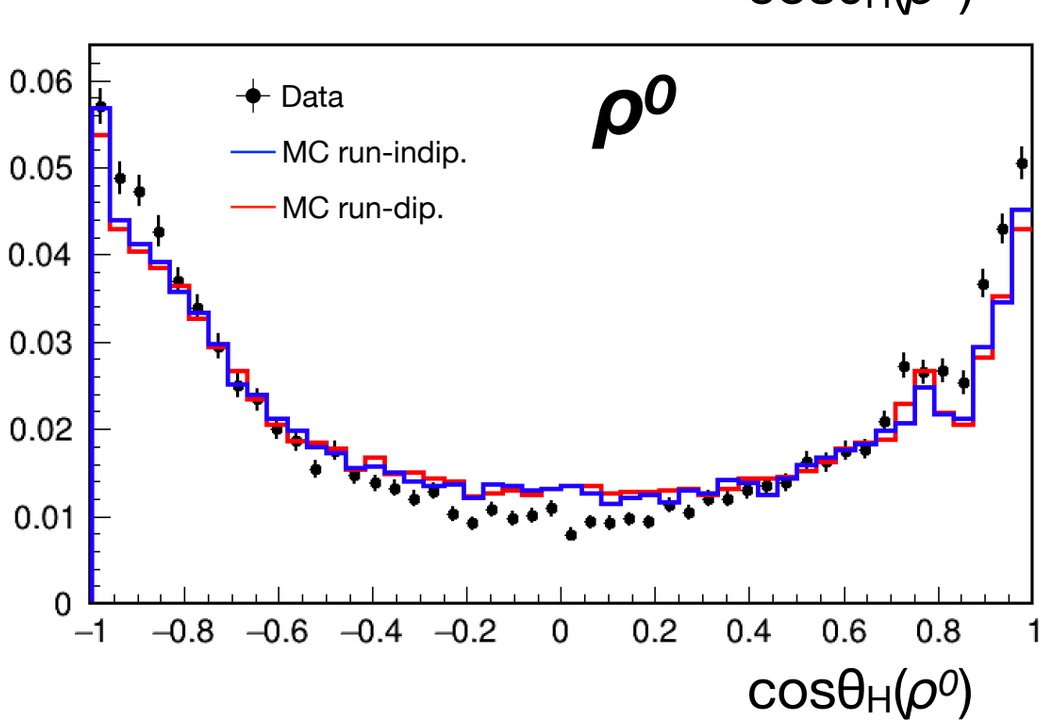
Trieste Physics Meeting
October 28, 2022

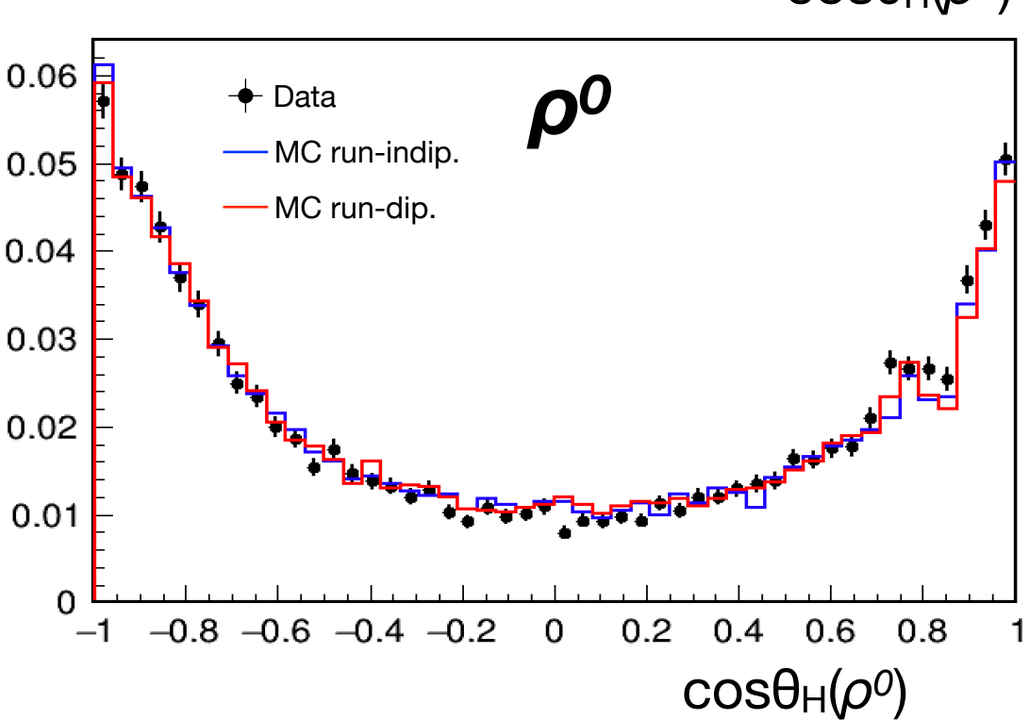
Reweight continuum only



2Dx2D weights from π momenta

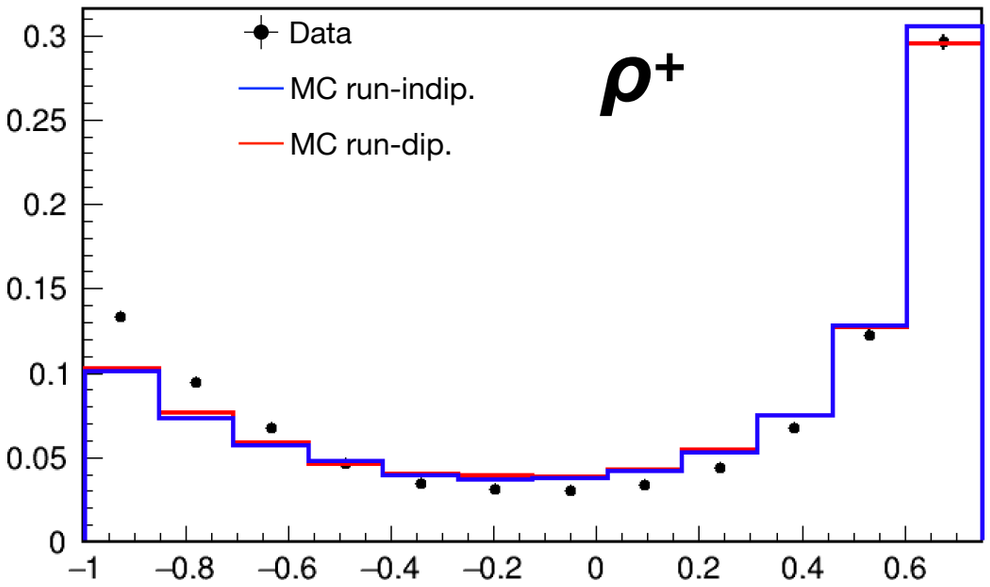




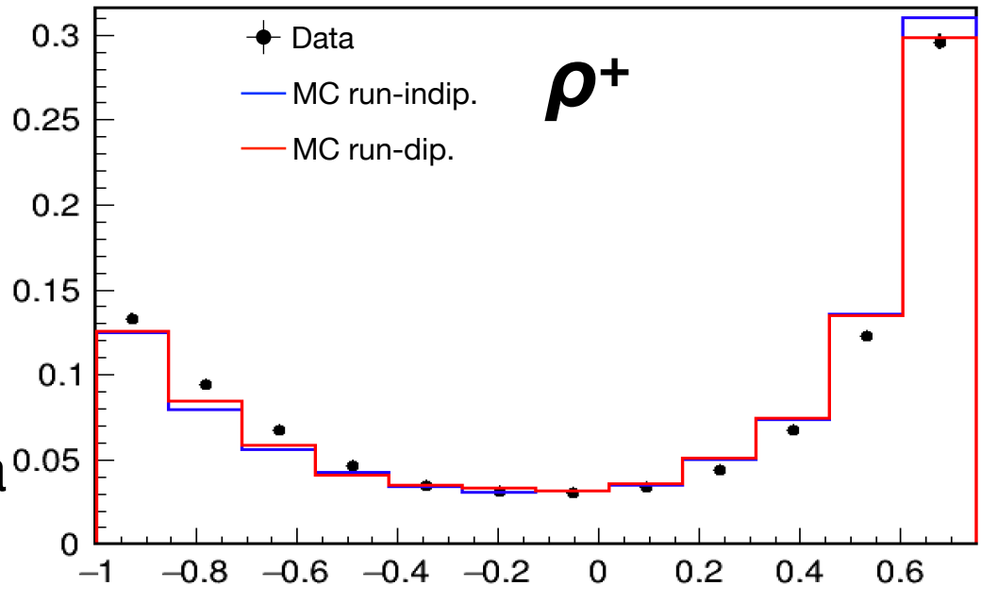


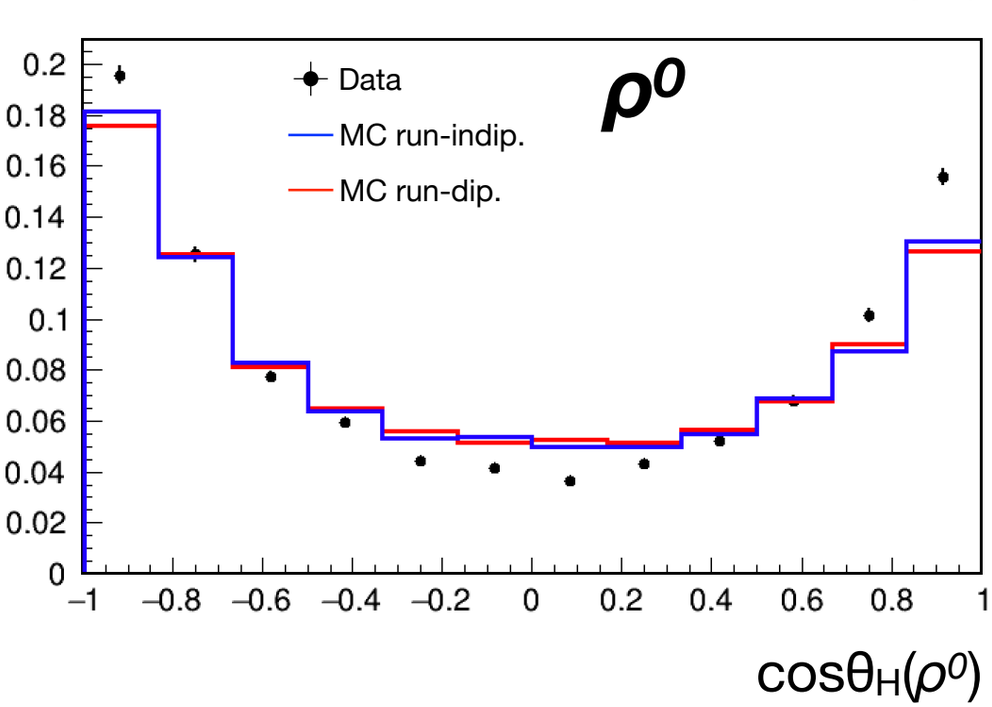
Reweighting on momenta of continuum improves the agreement.
No ri-rd differences.

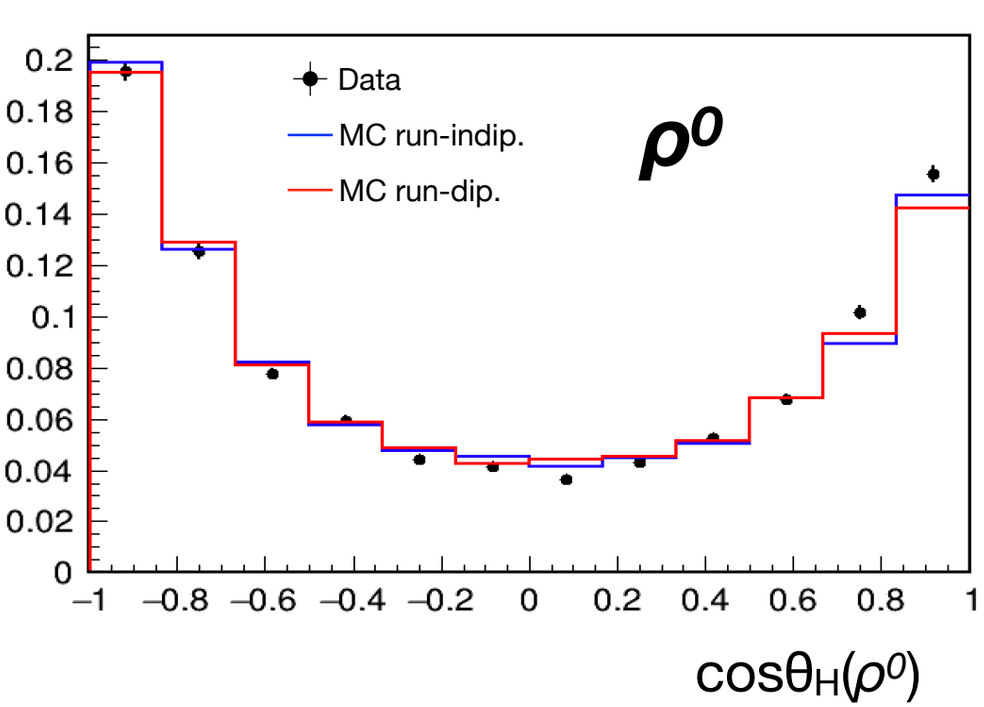
Use binning of the fit model



2Dx2D weights from π momenta



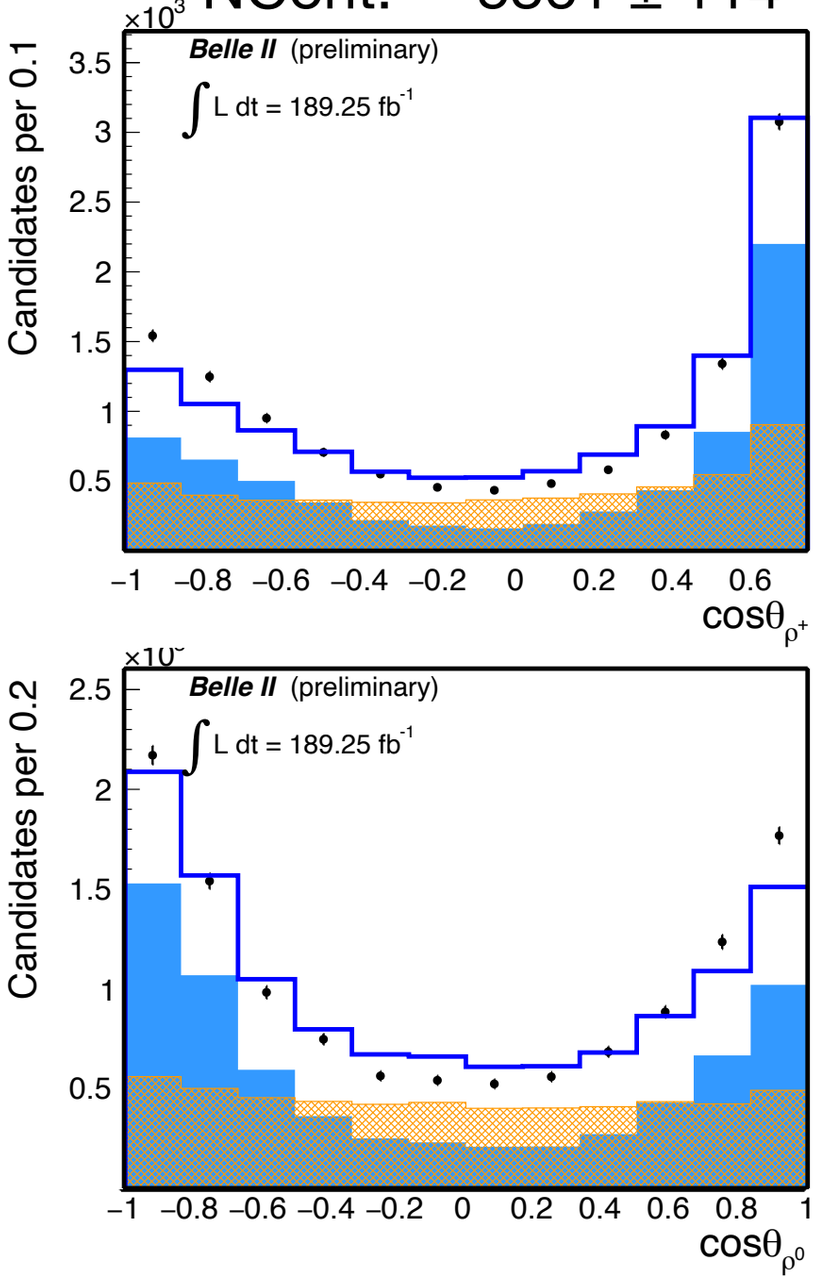




Some discrepancies still visible.

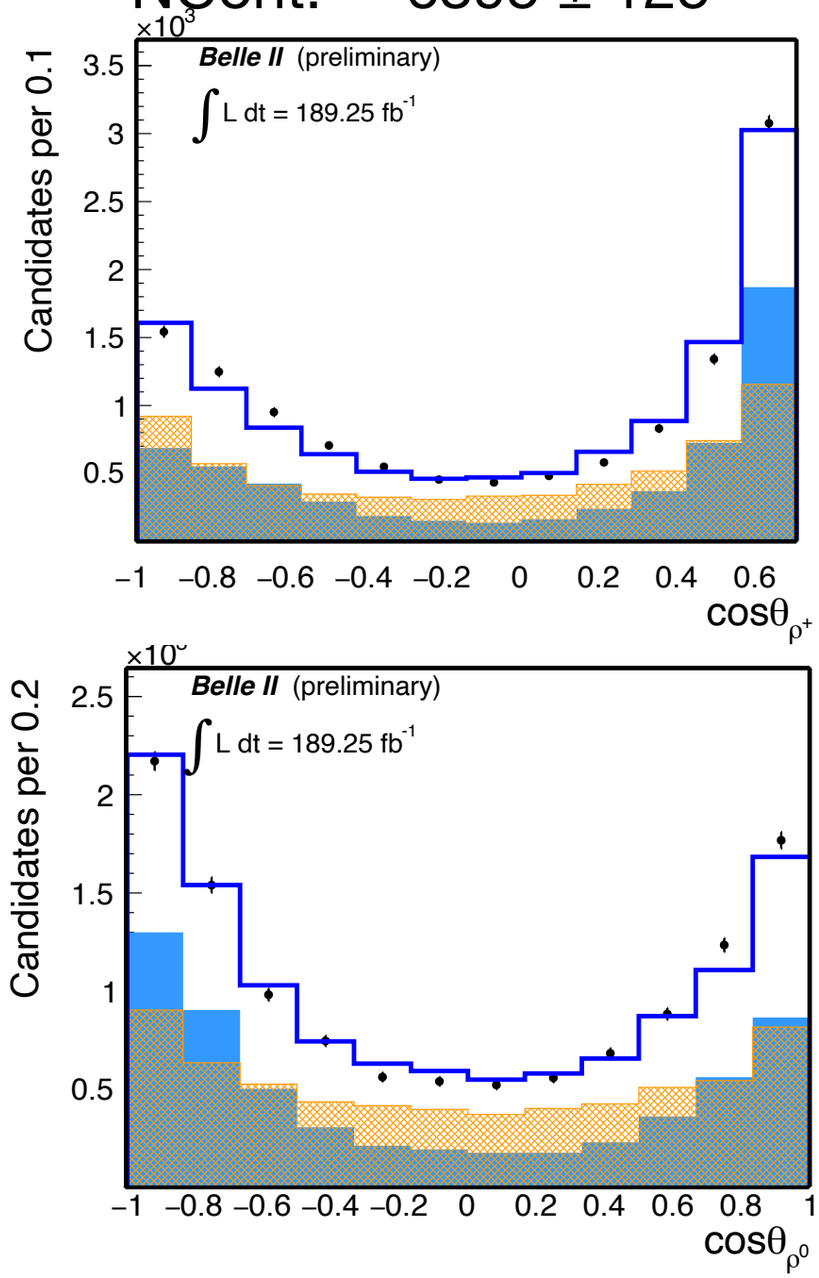
6D fit of the sidebands

-2LogL: **-211223**
NBBbar: 6836 ± 120
NCont: 5361 ± 114



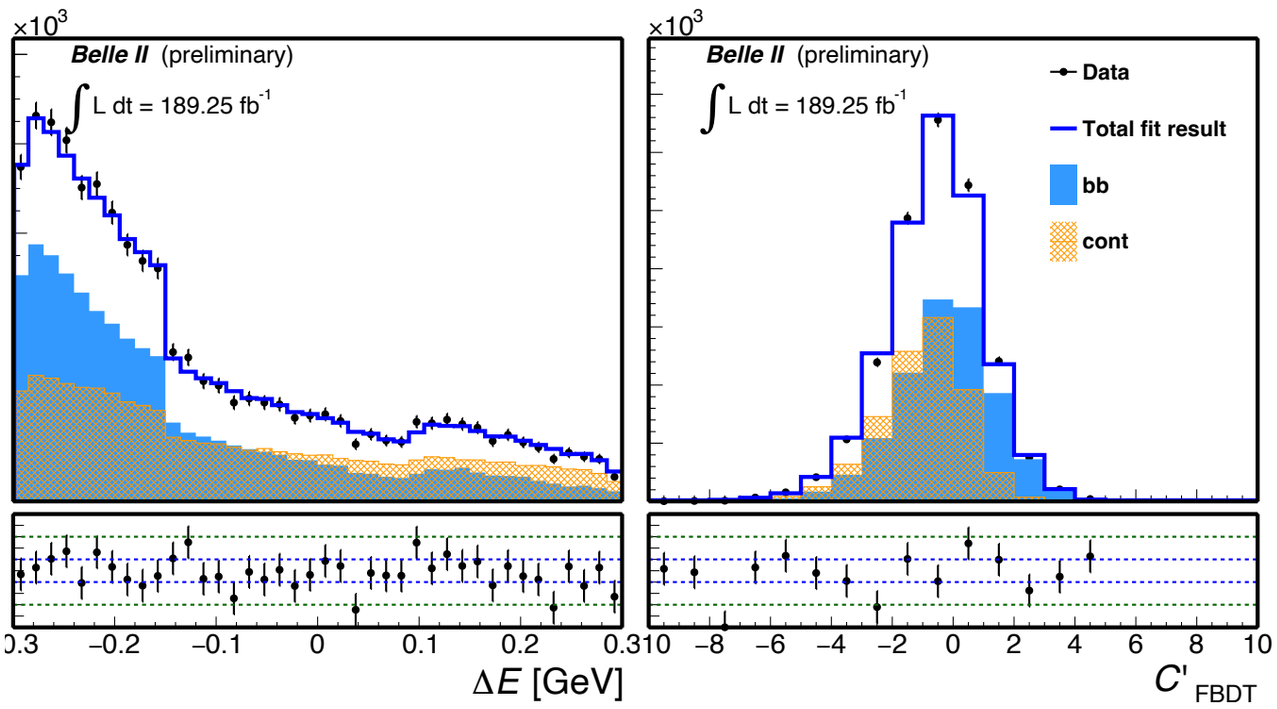
2Dx2D weights from π momenta

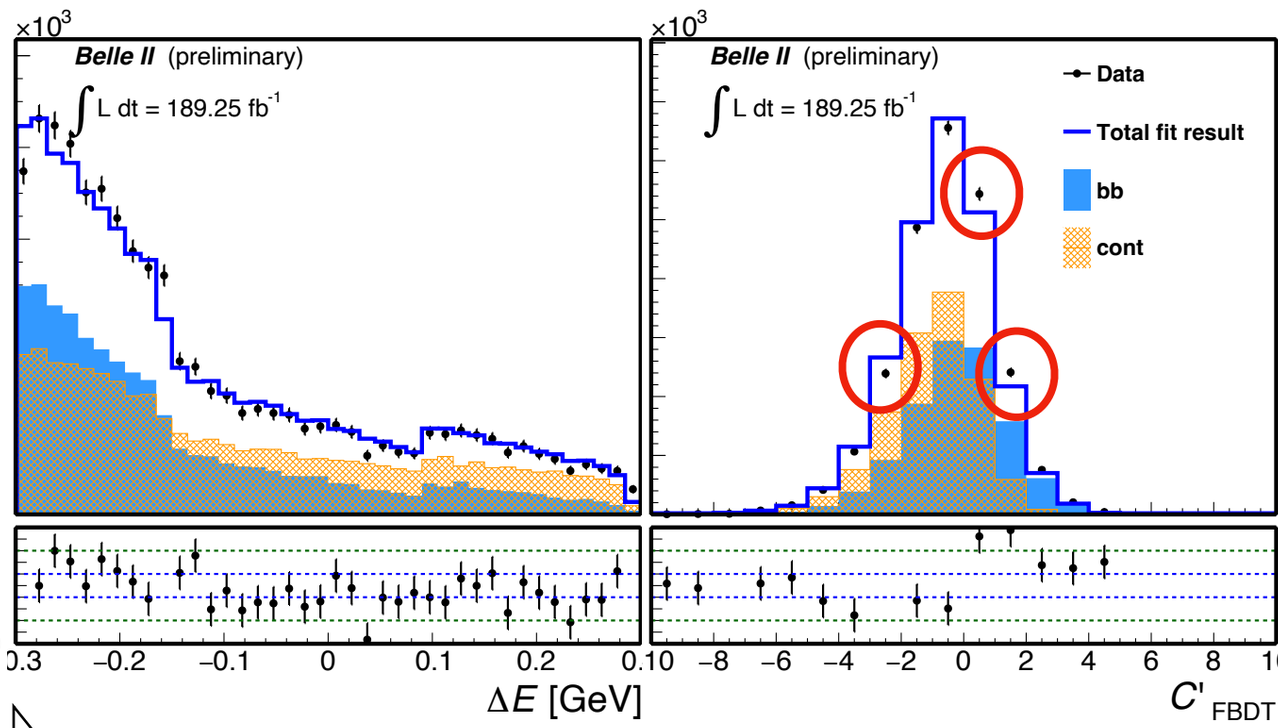
-2LogL: **-211372**
NBBbar: 5802 ± 124
NCont: 6395 ± 125

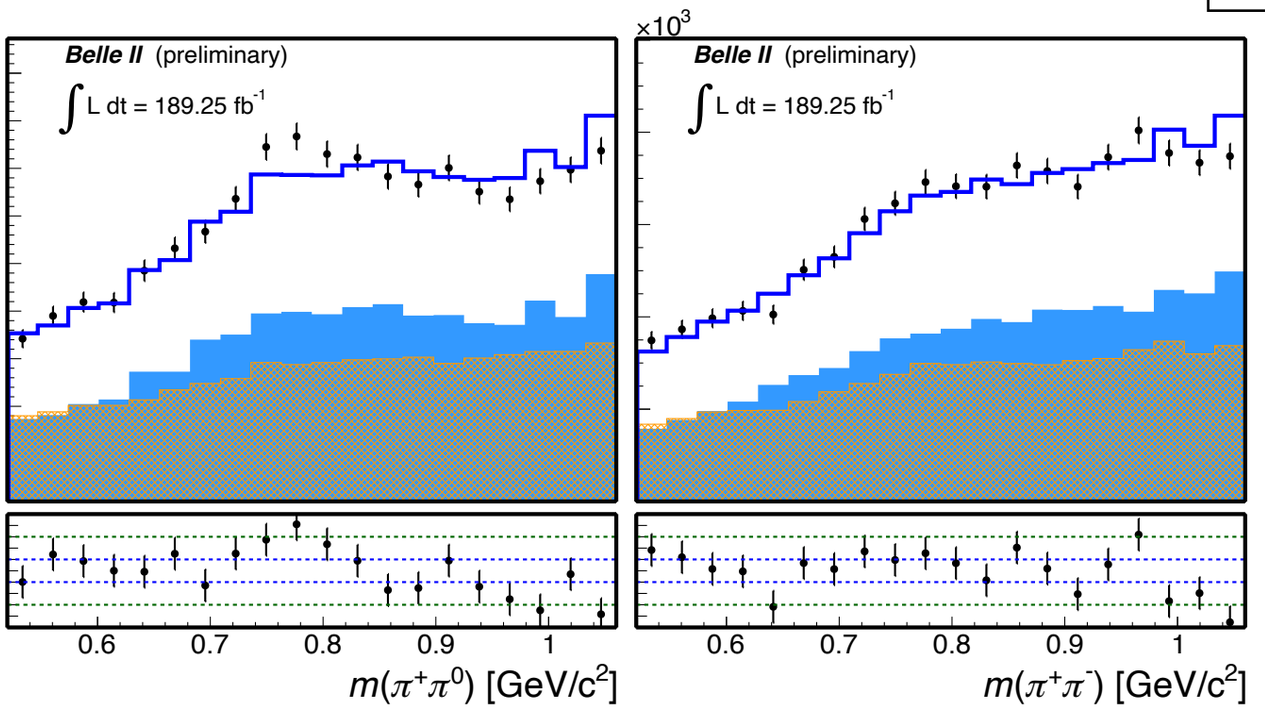


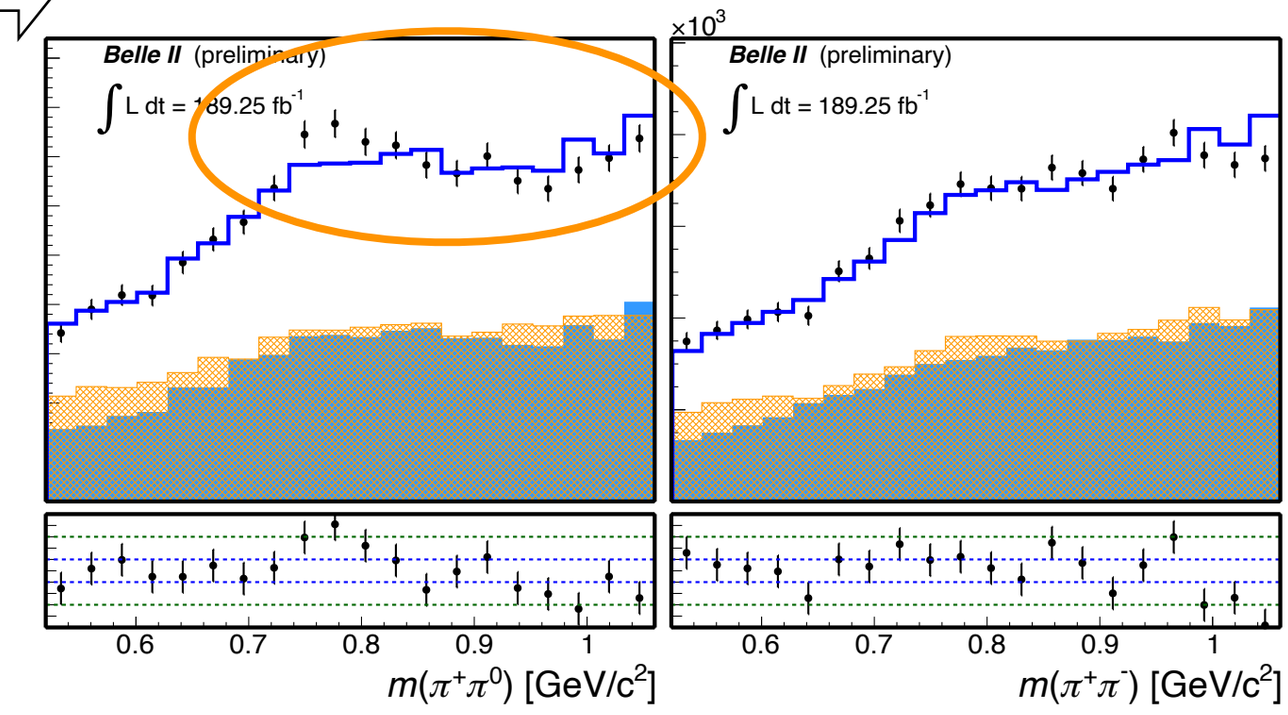
Still present some discrepancies, same as in data-MC simple comparison.

Fit sidebands









Other discrepancies not healed.

Next steps

Investigate angular mismodelling in BBbar, using also $B \to D^0 \rho$ (can I actually look at that, or would this unblind Olga's result for Moriond?).

Investigate residual mismodelling in the continuum.

[in parallel] Re-do on proc13+buckets and MC15.

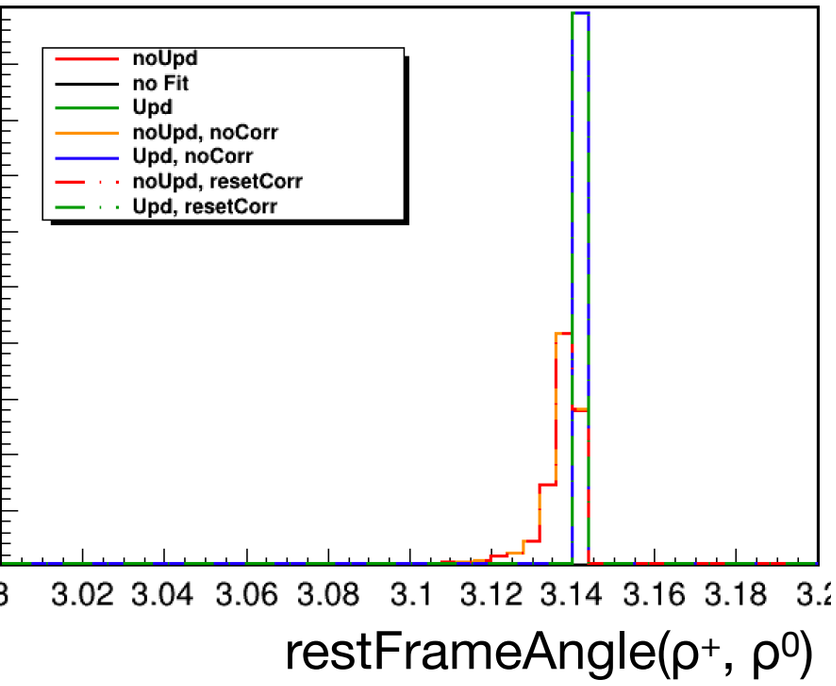
Investigate the impact of treeFit vs momentum scaling issue.

Explore treeFitter bug when called with p scaling

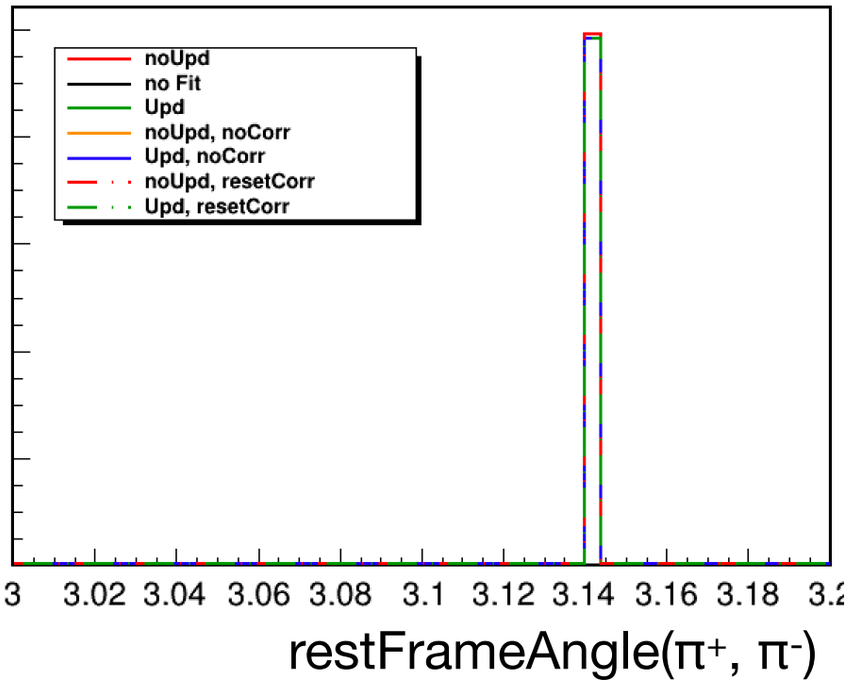
Test on one proc13 run

noUpd: treeFitter with updateAllDaughter=False
Upd: treeFitter with updateAllDaughter=True

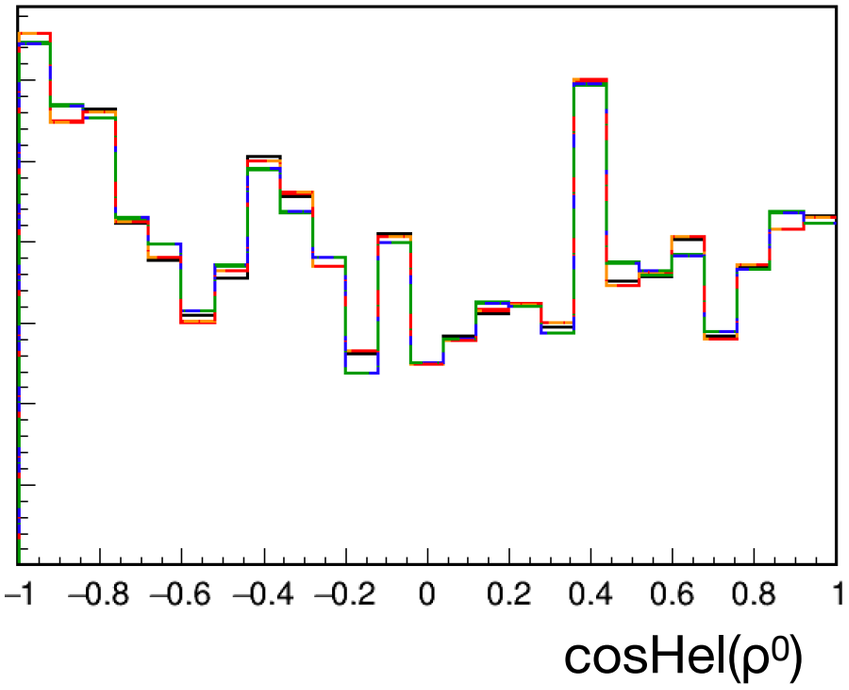
noCorr: momentum scale not applied
resetCorr: momentum scale applied, then reset to 1 after calling treeFit



Looks as expected.



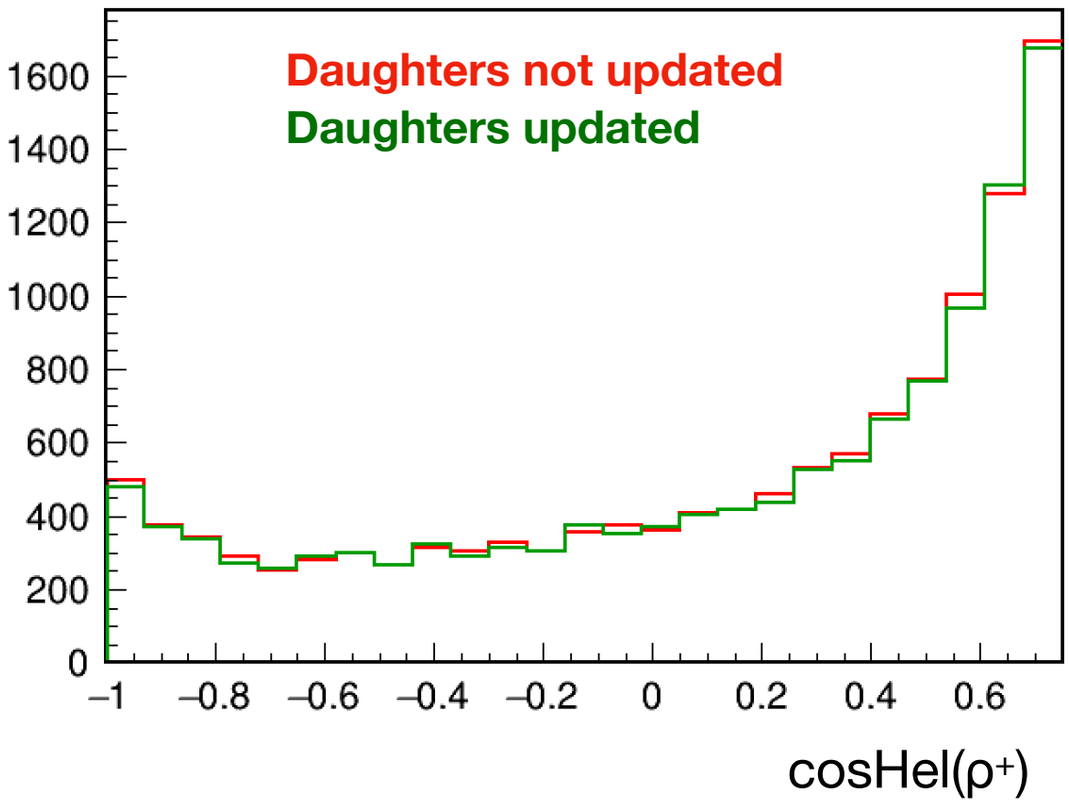
No difference, because treeFit doesn't use the B kinematics to go in the ρ^0 rest frame.

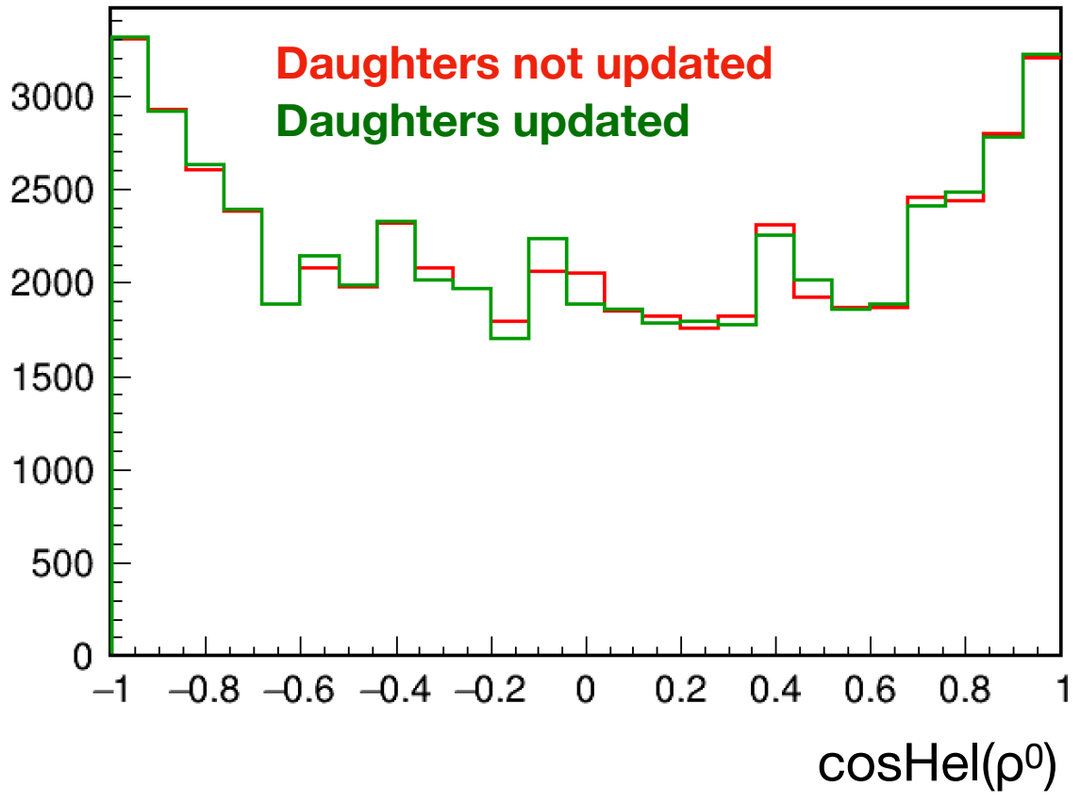


Conceptually wrong if daughters are not updated. Anyway impact looks small, will check with higher statistics.

Test on one proc13 run

Test on full run to check for discrepancies in helicity angles.
Run reconstruction only, no other cuts applied.



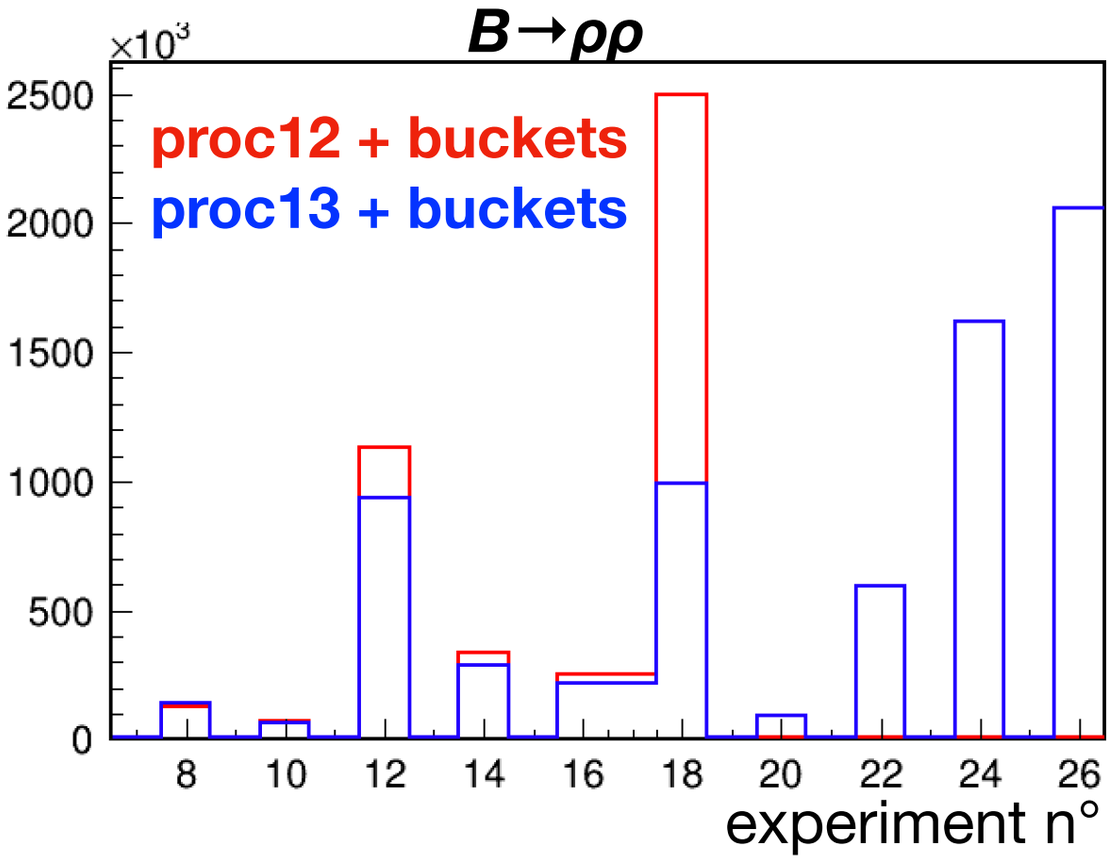


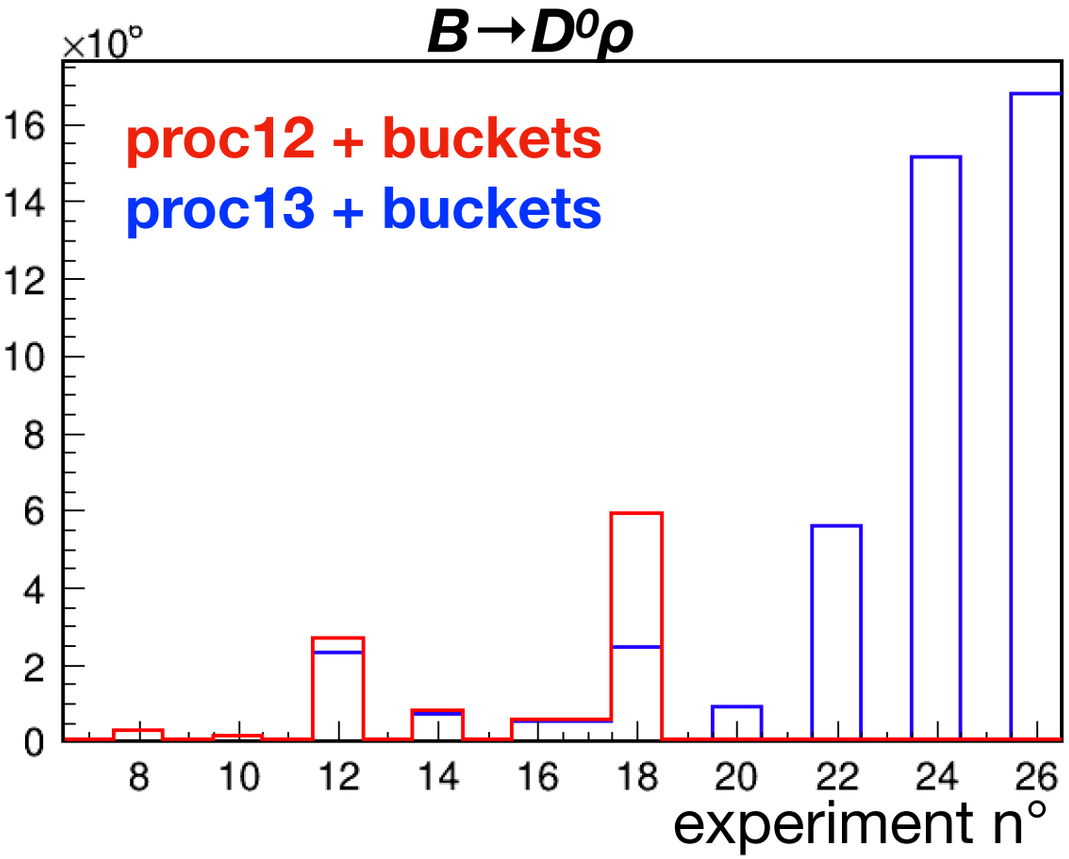
Impact looks negligible

Data problem

Problem in new data?

I ran on the various proc13 chunks as soon as they came out, re-ran any time a problem was signaled. Data shown after reconstruction, with loose cuts on CS, Mbc, ΔE.

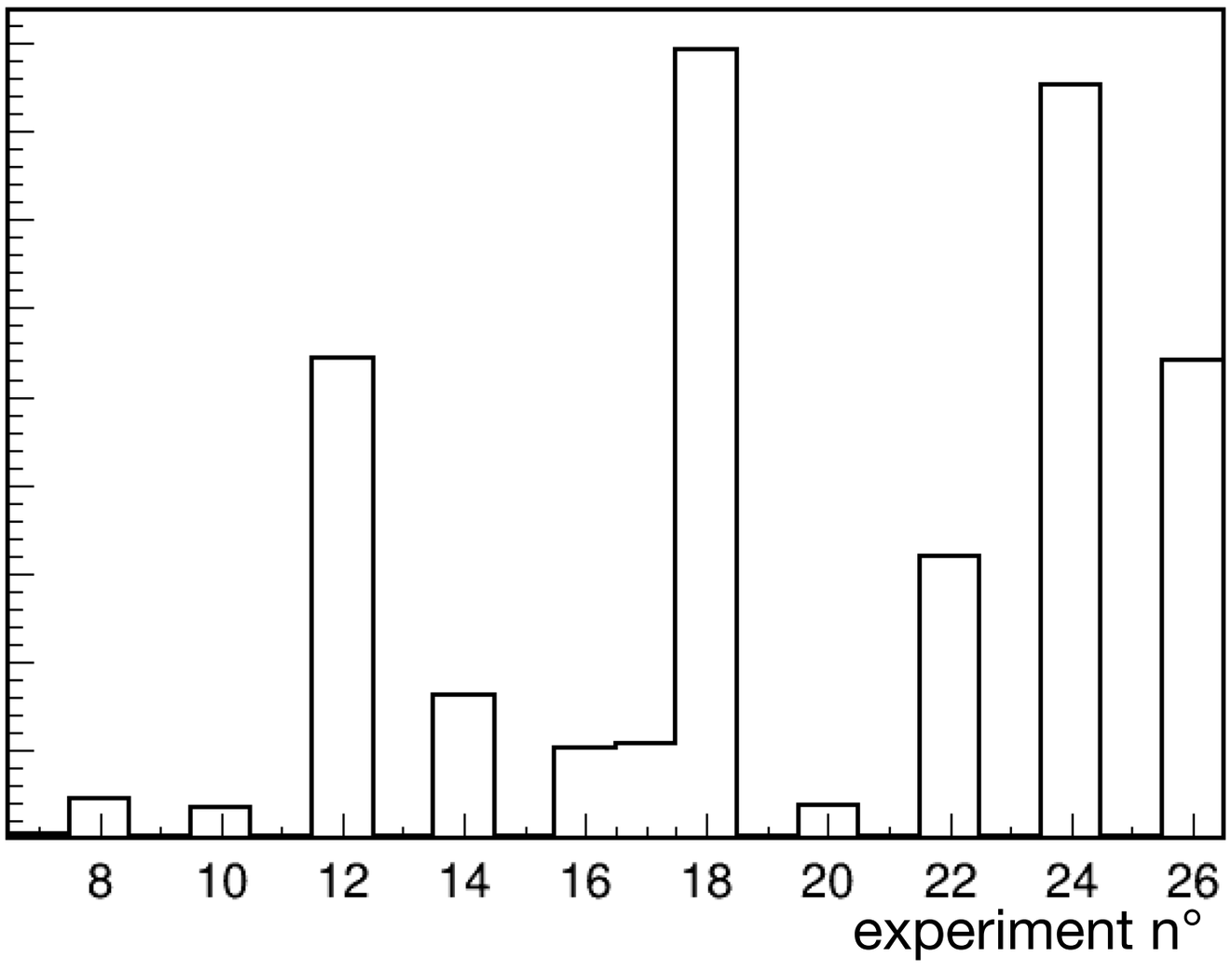


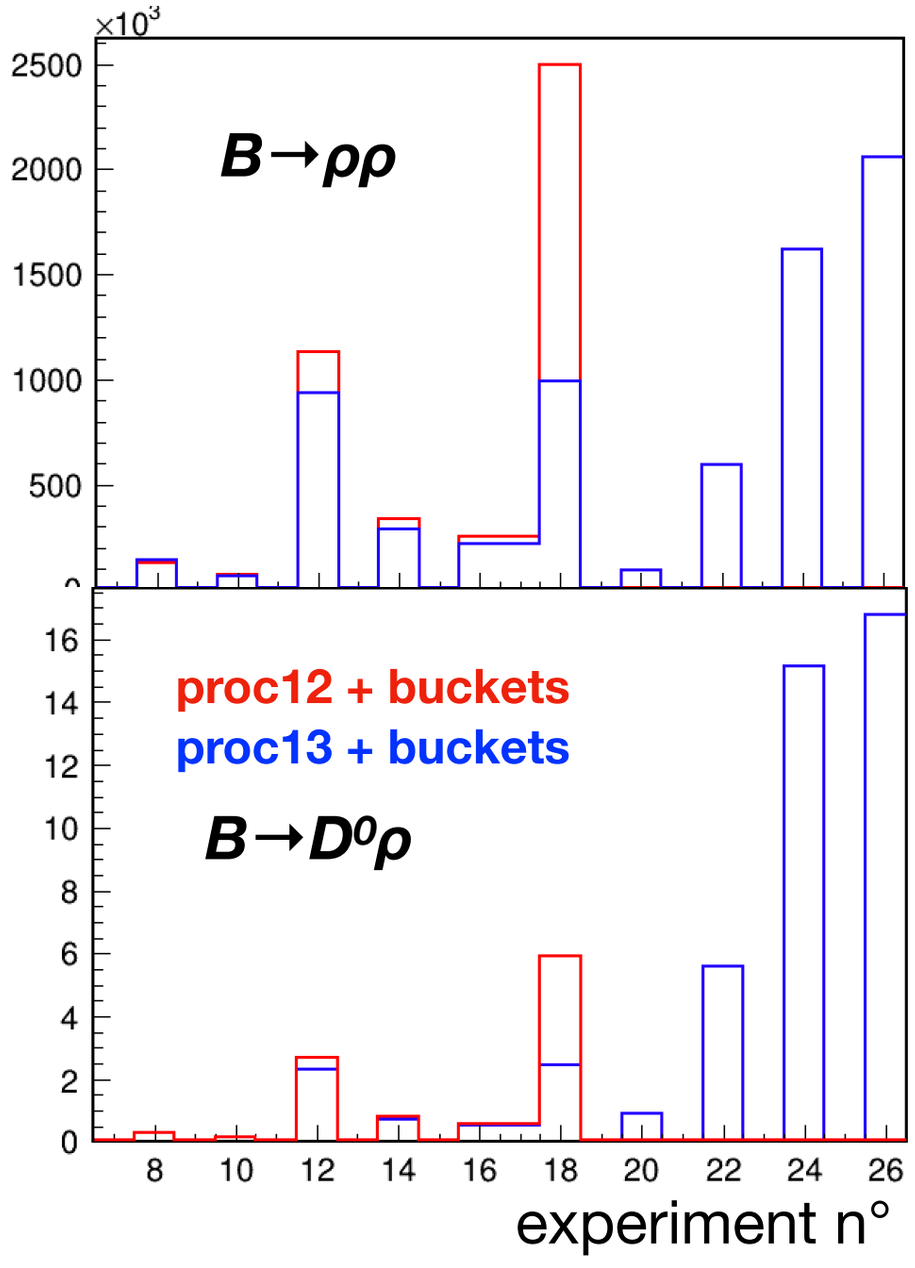


proc12+buckets is fine.
New data are less than expected.
Proportions among different experiments looks strange.

Problem in new data?

This is how it should look like, according to the confluence page https://confluence.desy.de/display/BI/Offline+Luminosity+Page.





Has this been observed from anybody else?
Could this be a problem in the experiment number assignment or in the collections?