Cuts : comparing RUN 7 [60%;100%] pdst vs. pur Jpsi MC

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Outline

Setup

Conclusions

Setup

All runs available as pdst we used: 489 (which may not be all completed) $= 2.18\times10^9$ bbc lvl1 scaled events

The lists are available here:
`~silvestr/afs/muons_/work/fun4all_run7_AuAu/runlist_south_07-11-22.txt`
`~silvestr/afs/muons_/work/fun4all_run7_AuAu/runlist_north_07-11-22.txt`

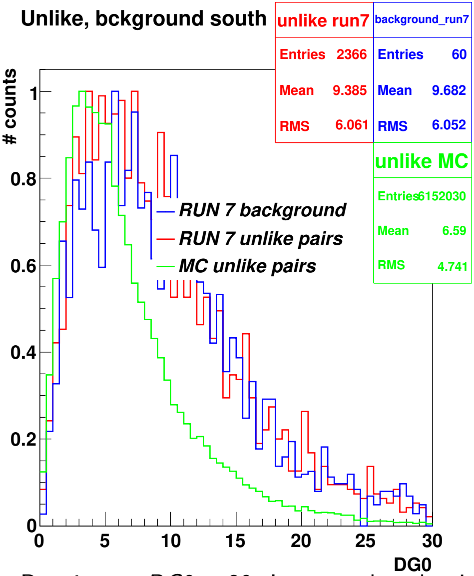
The pur jpsi simulations used are located here:
`/phenix/u/hpereira/simulation/run7_auau/muon_arms/pdst`

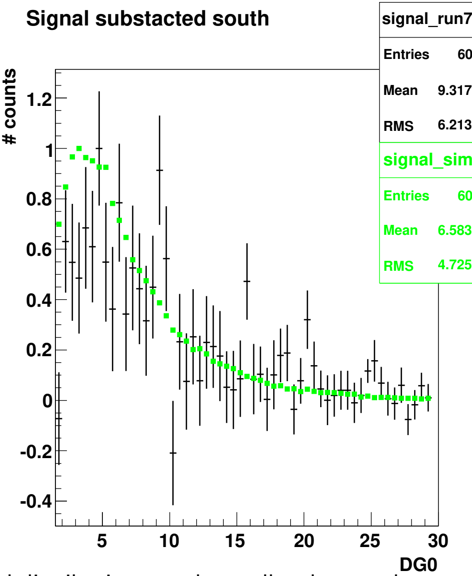
The slides show:

- DG0
- DDG0
- chi2
- vtxchi2

Distribution were normalised to the maximum value in order to be compared on the same plot.
Previous homework: those distributions include a cut on the mass around [2.7;3.5]

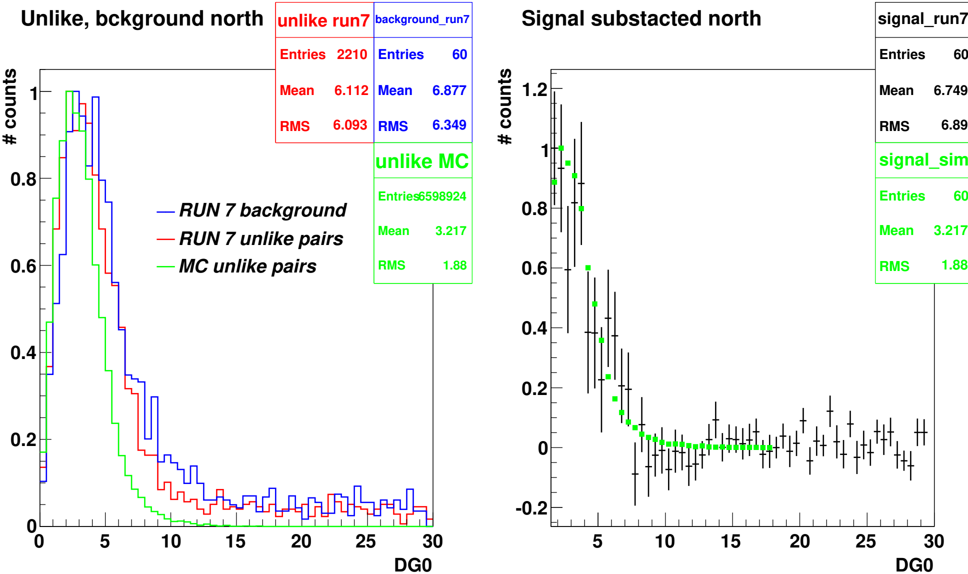
DG0 south arm





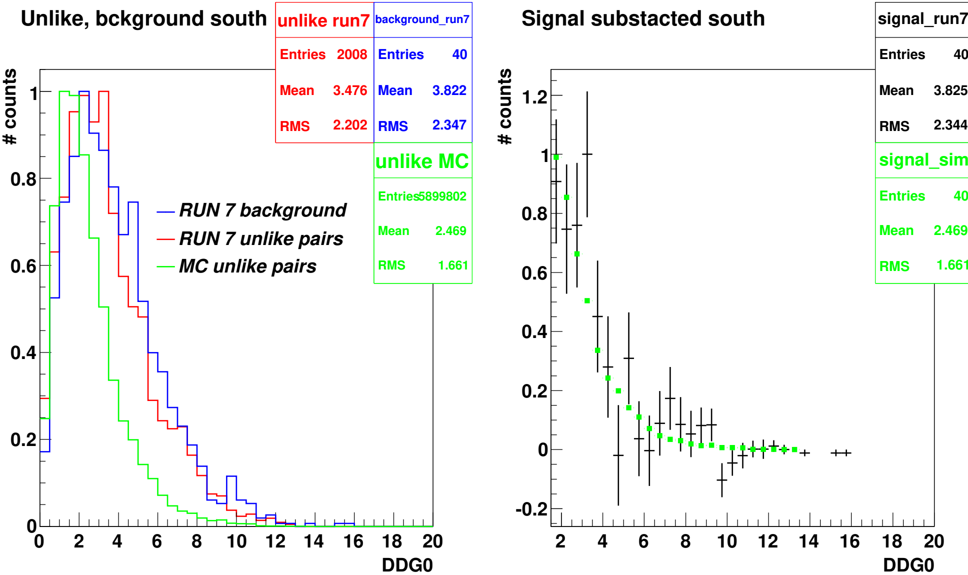
Run 4 cut : $DG0 < 20$. It seems that the signal distribution matches well to lower values than run 4 cut. Cut the DGO south at 15 ?

DG0 north



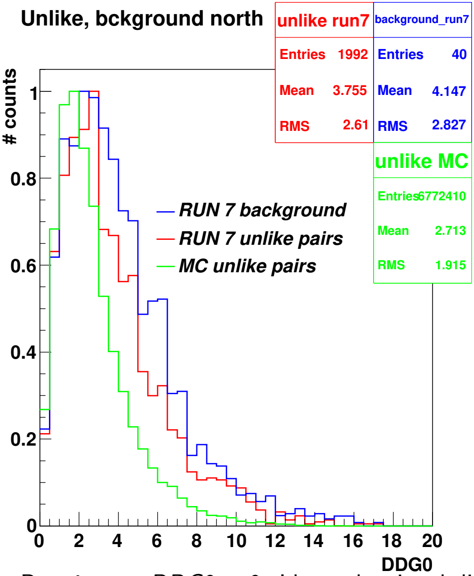
Run 4 cut : $DG0 < 15$. The signal distribution matches the MC quiete well. Couldn't we lower to cut ?

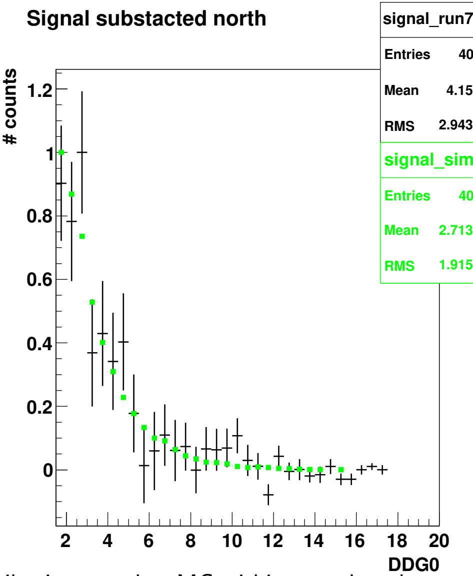
DDG0 south



Run 4 cut : $DDG0 < 9$. On the whole the signal distribution matches the MC but I don't know what to think about the discontinuity at 9. Should we loosen the cut ? May be we need more stat to reduce the fluctuations.

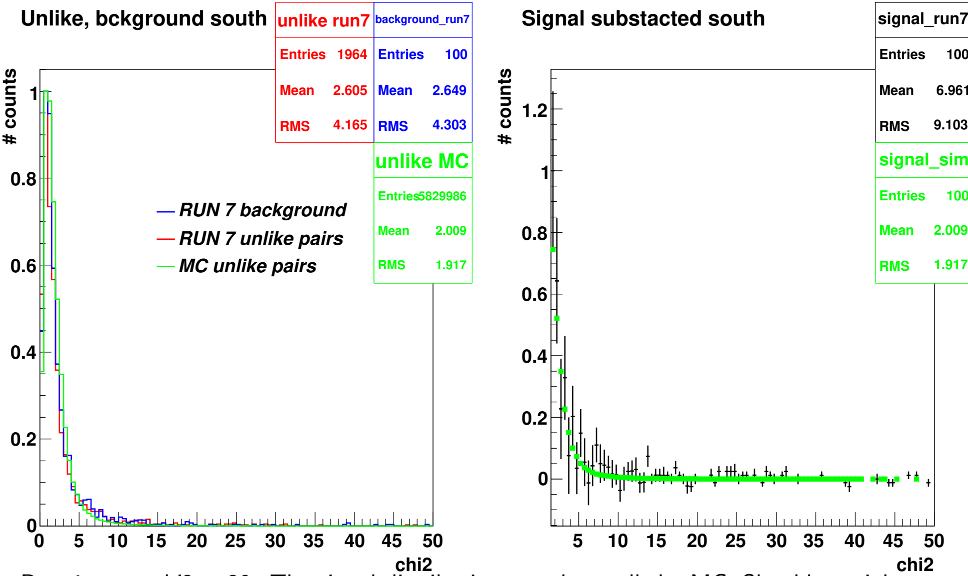
DDG0 north





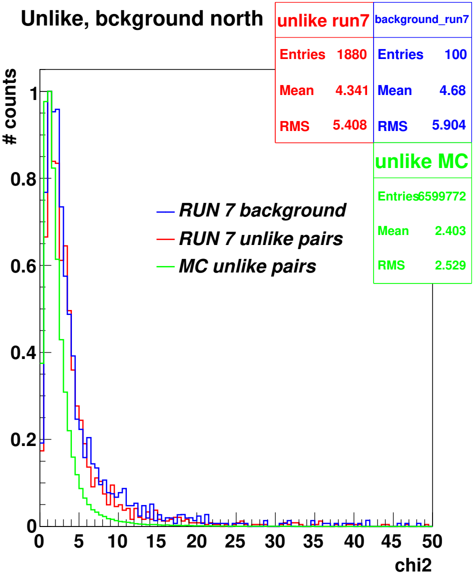
Run 4 cut : $DDG0 < 9$. Idem: the signal distribution matches MC within error bars but lots of fluctuations.

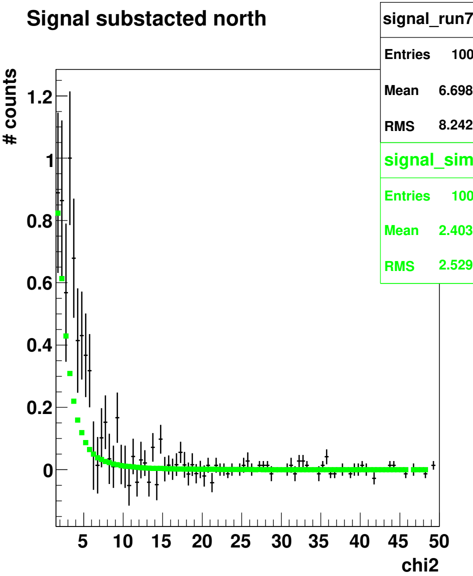
Track chi2 south



Run 4 cut : $chi2 < 30$. The signal distribution matches well the MC. Should we tighten the cut ?

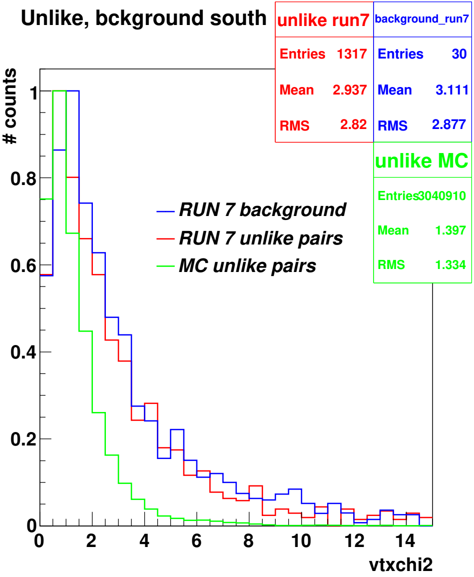
Track chi2 north

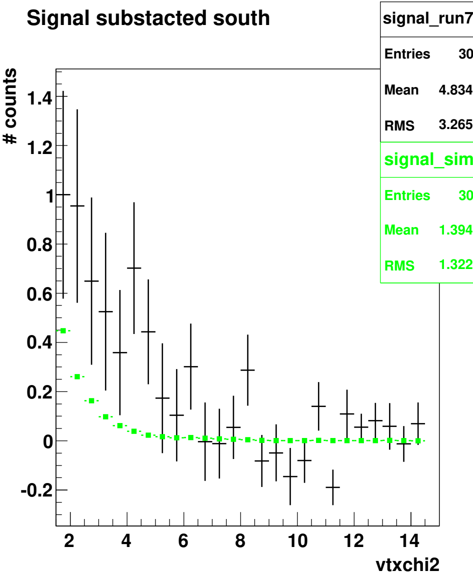




Run 4 cut : $chi2 < 30$. The signal distribution isn't reproduced at low chi2. However up to well below Run 4 cut, the 2 distributions match.

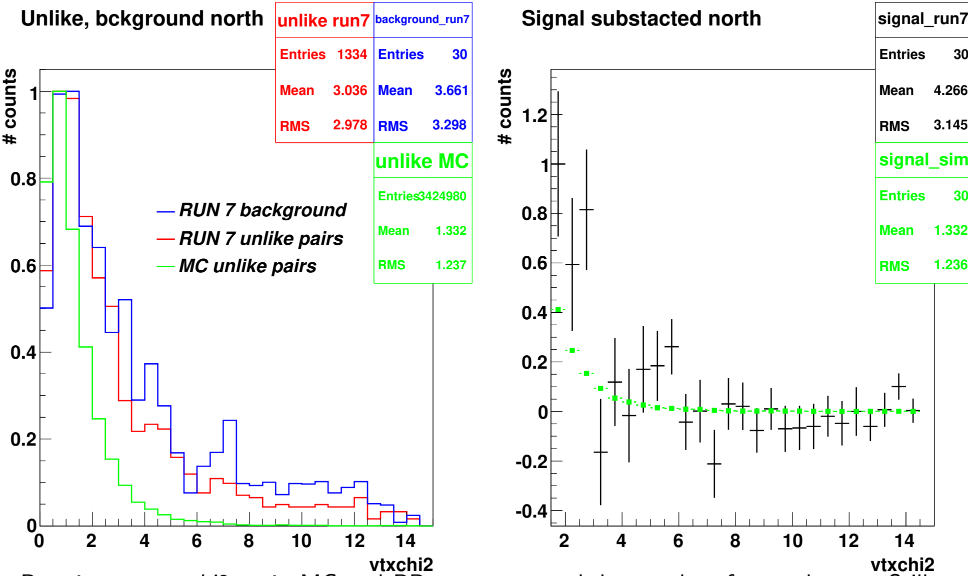
Vertex chi2 south





Run 4 cut : $vtxchi2 < 4$. There might me a probleme with this distribution for the south arm...

Vertex chi2 north



Run 4 cut : $vtxchi2 < 4$. MC and RD seem to match better than for south arm. Still shouldn't we loosen the cut ?

Outline

Perspectives

Suggested cuts:

Run more RD stat: ongoing.