Tracking Pseudo Efficiency in SP8

Data and MC Low pT dependence comparison.
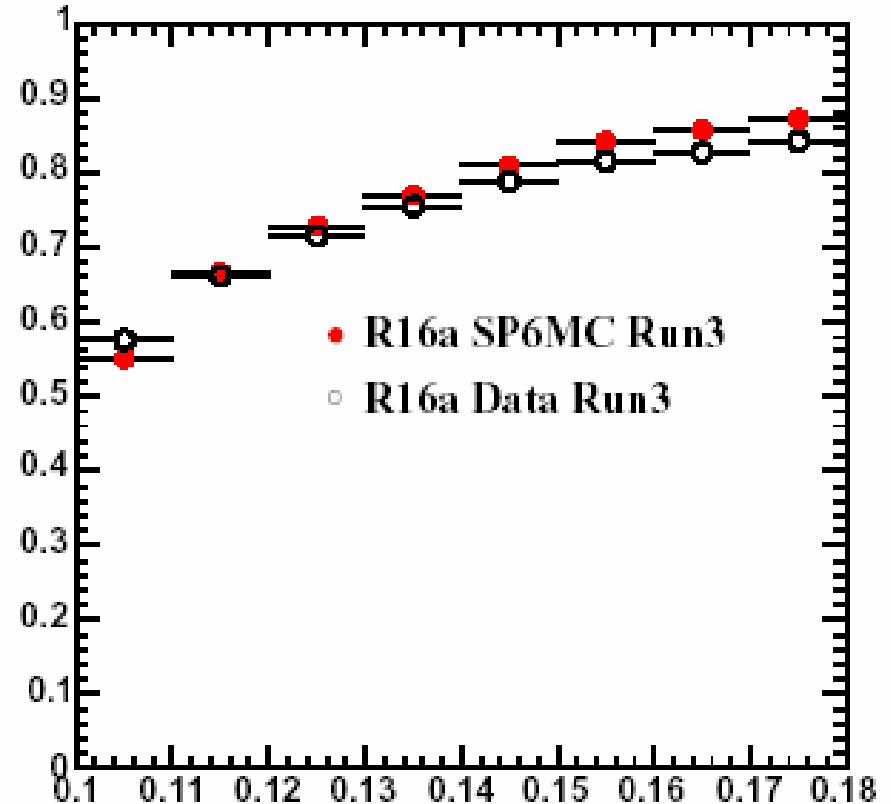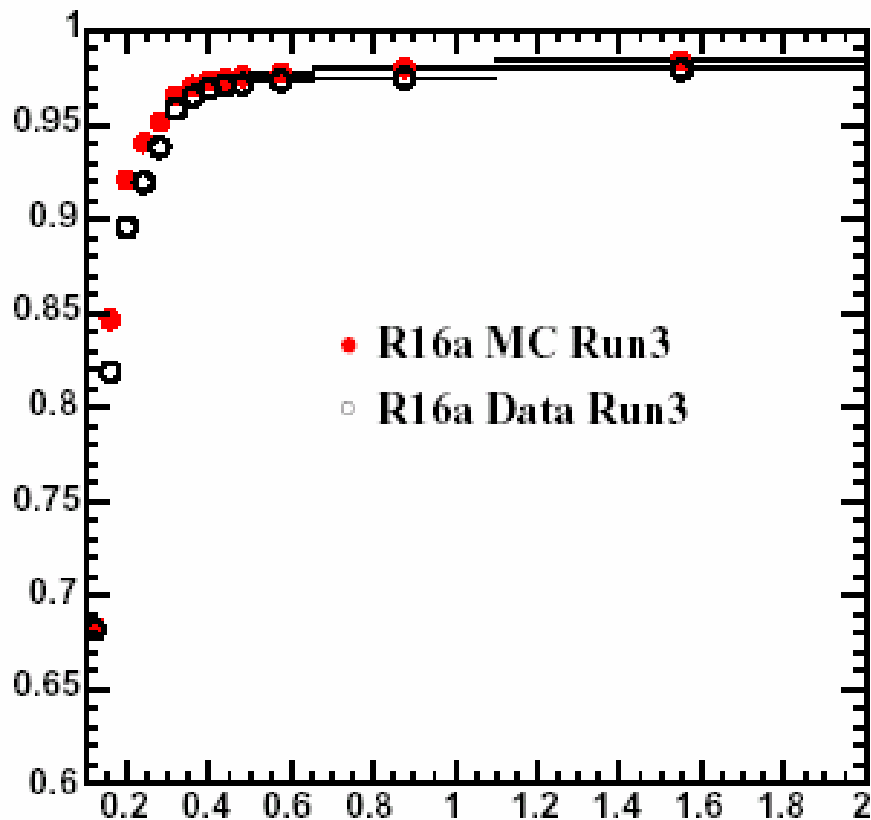
Tracking Pseudo-Efficiency

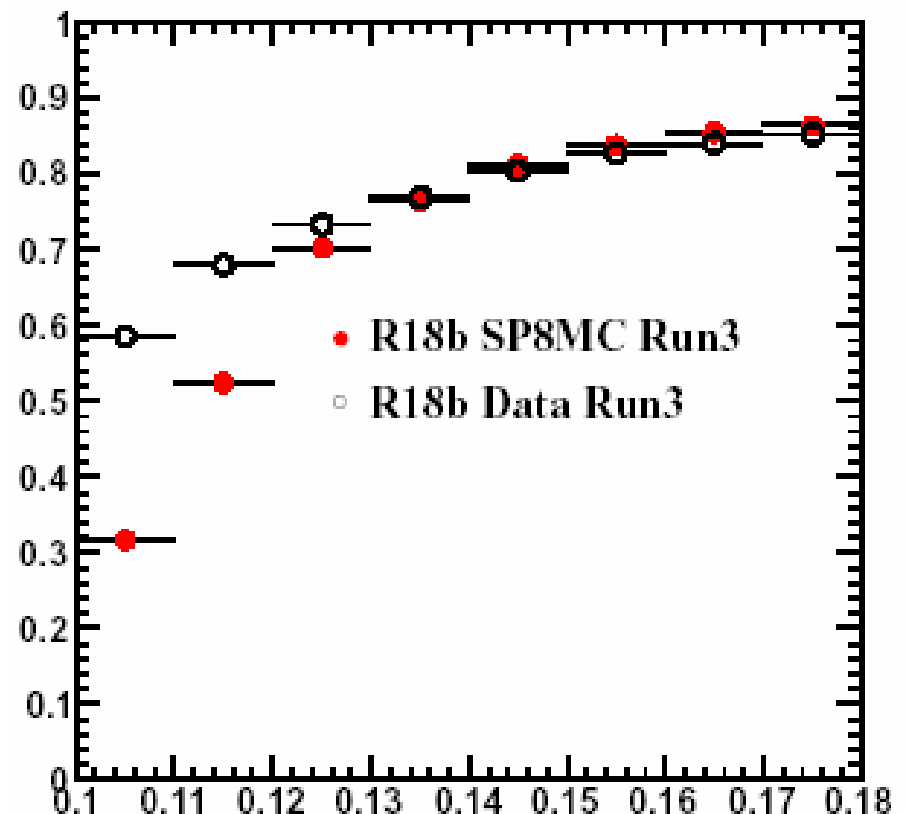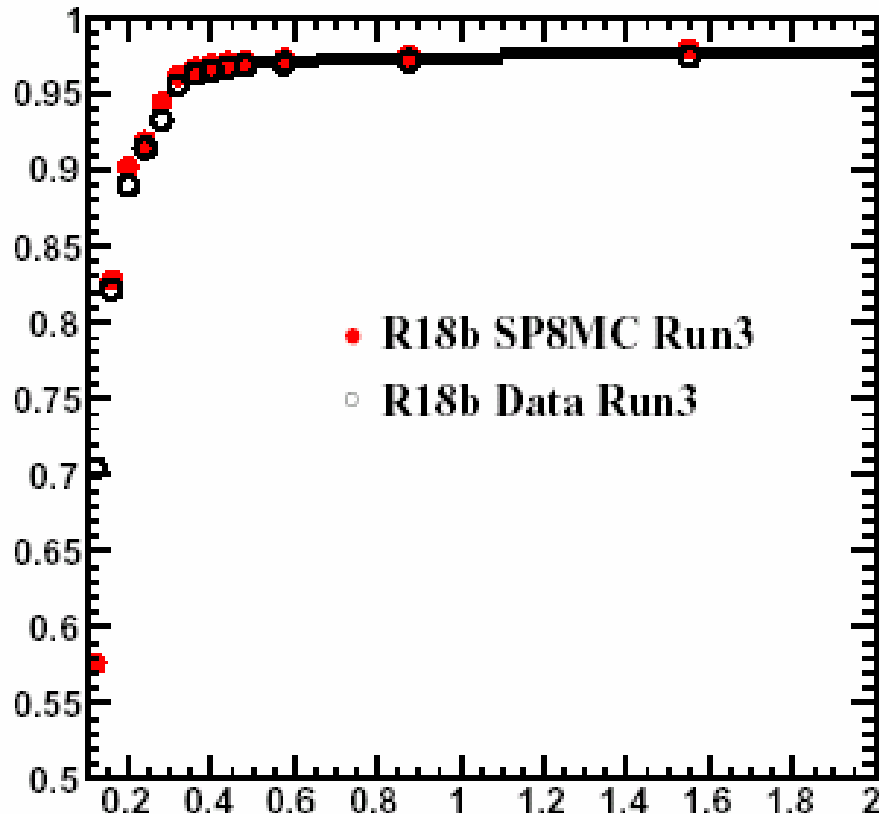- Definition of pseudo-efficiency.

$$e = \frac{nGTL}{nGTVL}$$

  - GTVL (GoodTracksVeryLoose) does not require DCH hits.
  - GTL (GoodTracksLoose) require 12 DCH hits.
- Reflect the efficiency of SVT+DCH
- Can measure pT, theta, phi and multiplicity dependence.
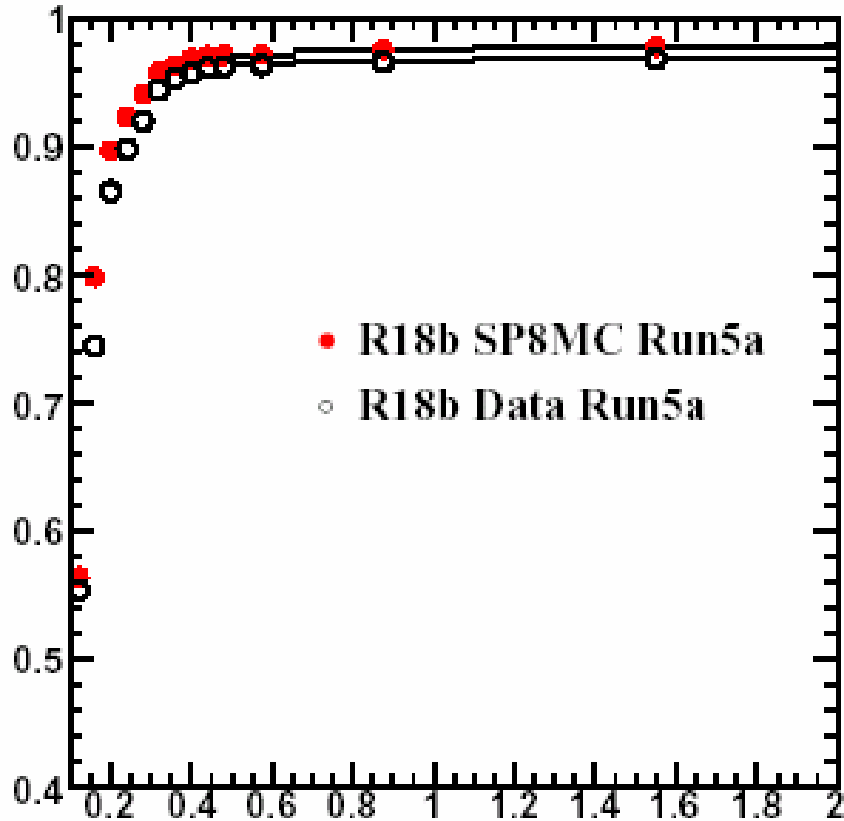- Today's focus = low pT dependence.

SP5/SP6 Run3 (R16b skim)
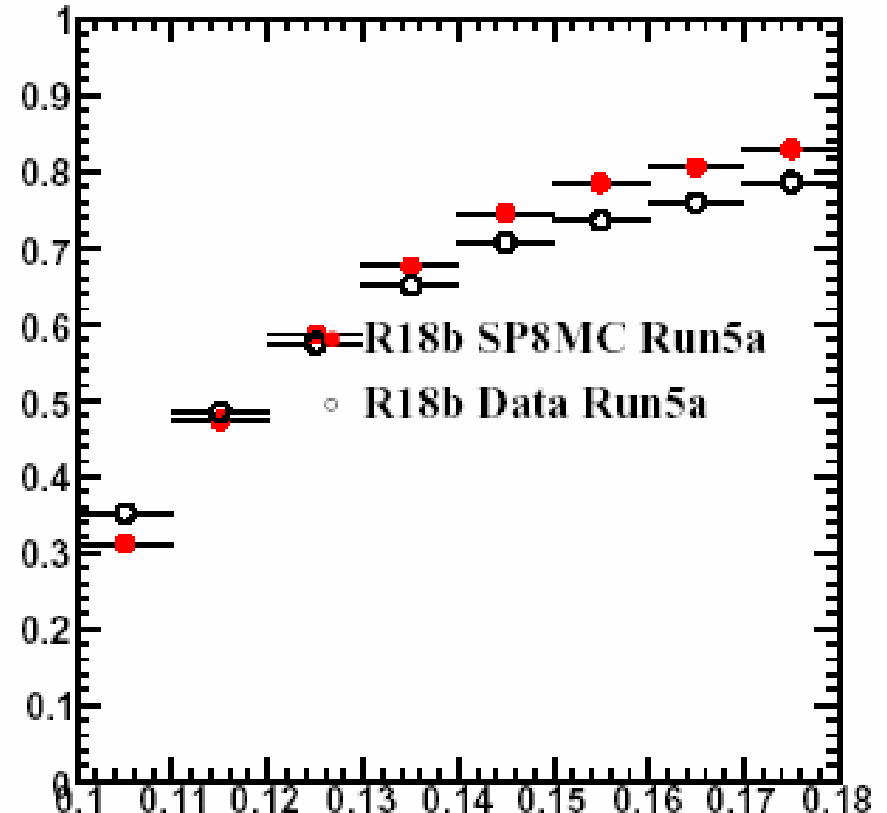

Good Data MC agreement

SP8 Run3 with G4 bug (R18b skim)

pT < 140 MeV region is affected

SP8 Run5 : no G4 bug (R18b skim)

Legend (left plot):
- ● R18b SP8MC Run5a
- ○ R18b Data Run5a

Legend (right plot):
- ● R18b SP8MC Run5a
- ○ R18b Data Run5a

Overall Data MC agreement is worse than Run3

pT < 140 MeV looks better

Summary

- After G4 bug fix, data MC agreement is better.
- Need bug fixed Run3 MC to confirm.
- Release 19.4.1 MC is not ready.

Back up slide