Update on light nucleus analyses

W.J. Llope

lfspectra meeting 6/9/2011

Outline:

- Status of corrections
- 19.6 GeV

Corrections

Three corrections needed:

1. Absorption: “done”
2. pbar feed-down: AMPT & UrQMD simulations still in progress
3. Reconstruction efficiency (still need embedding, no estimate)

re: 1 & 2: see also http://wjllope.rice.edu/d/protected/LFspectra_20110324.pdf

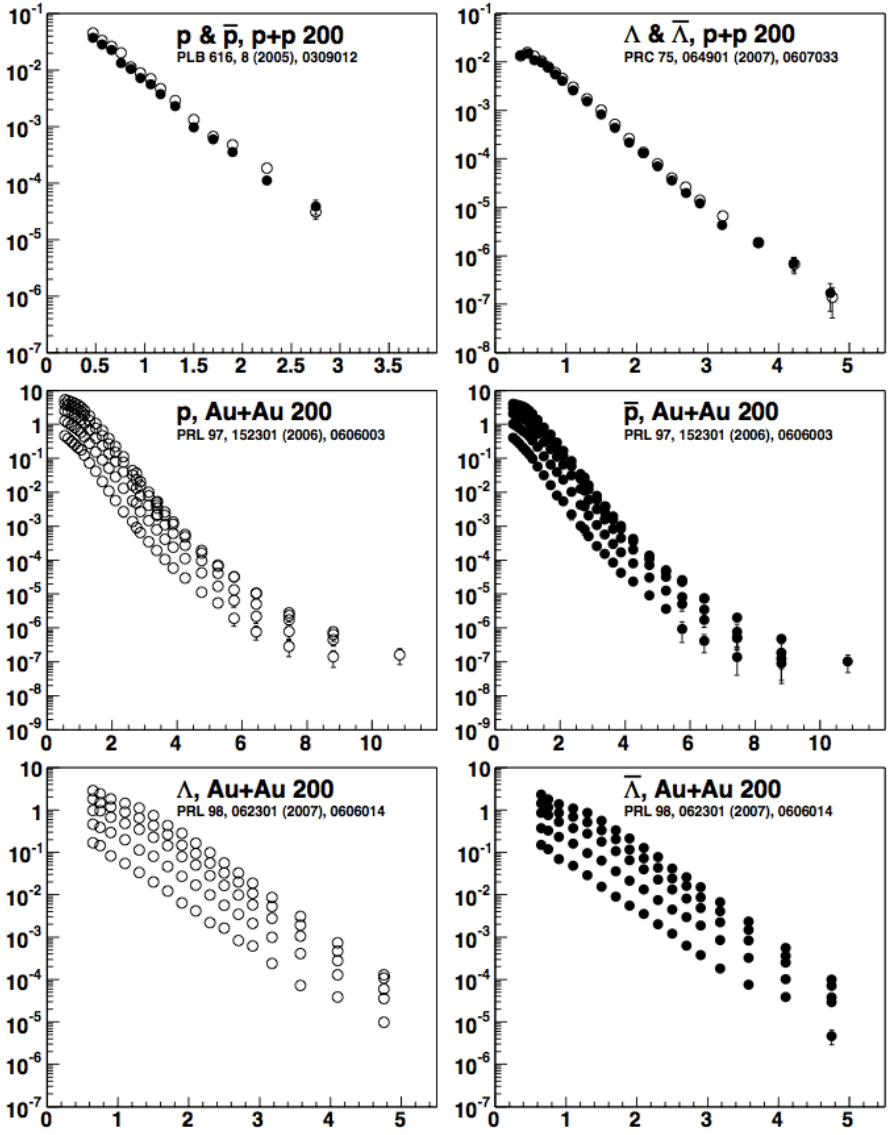
basic idea
-generate full events using a model
-starsim…
-bfc…
-use association maker branches to match reconstructed tracks to evgen tracks
-calculate probability that pbars from hyperon decay are measured as primaries

-now running minbias 200 GeV Au+Au
-need to do other energies as well…

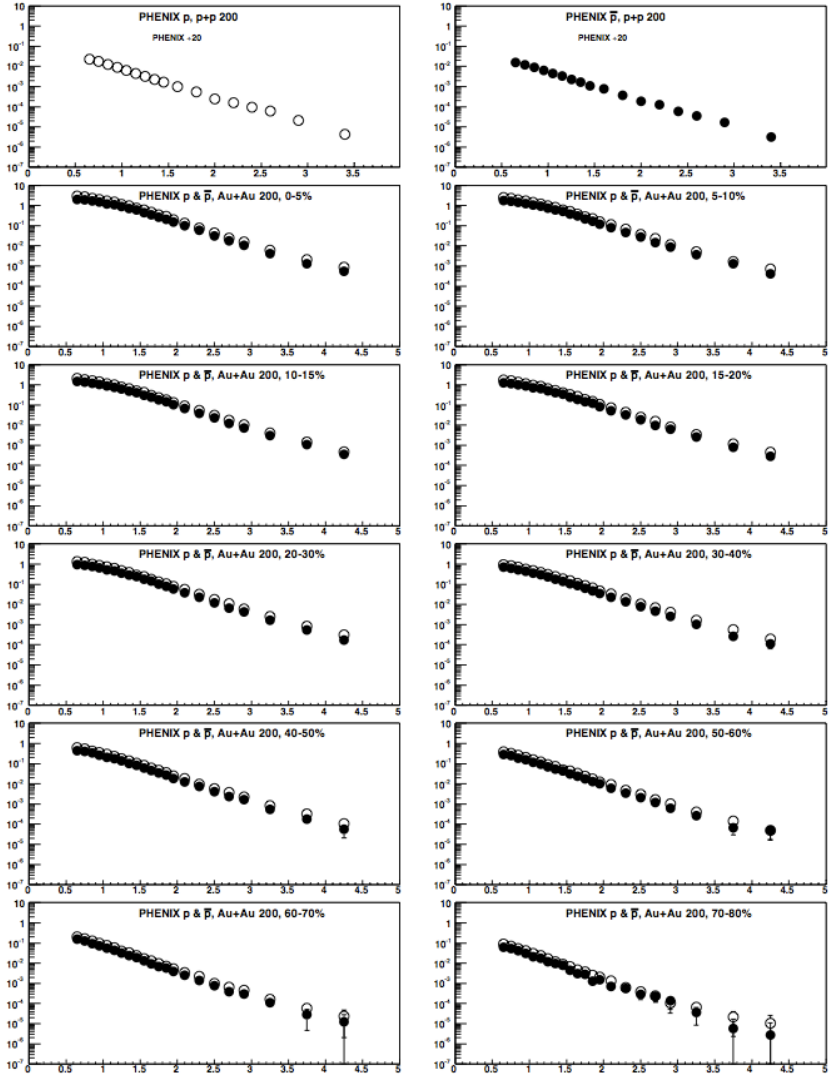
-now also comparing/scaling simulated spectra to published results

Published cross-sections

STAR



PHENIX p and pbar

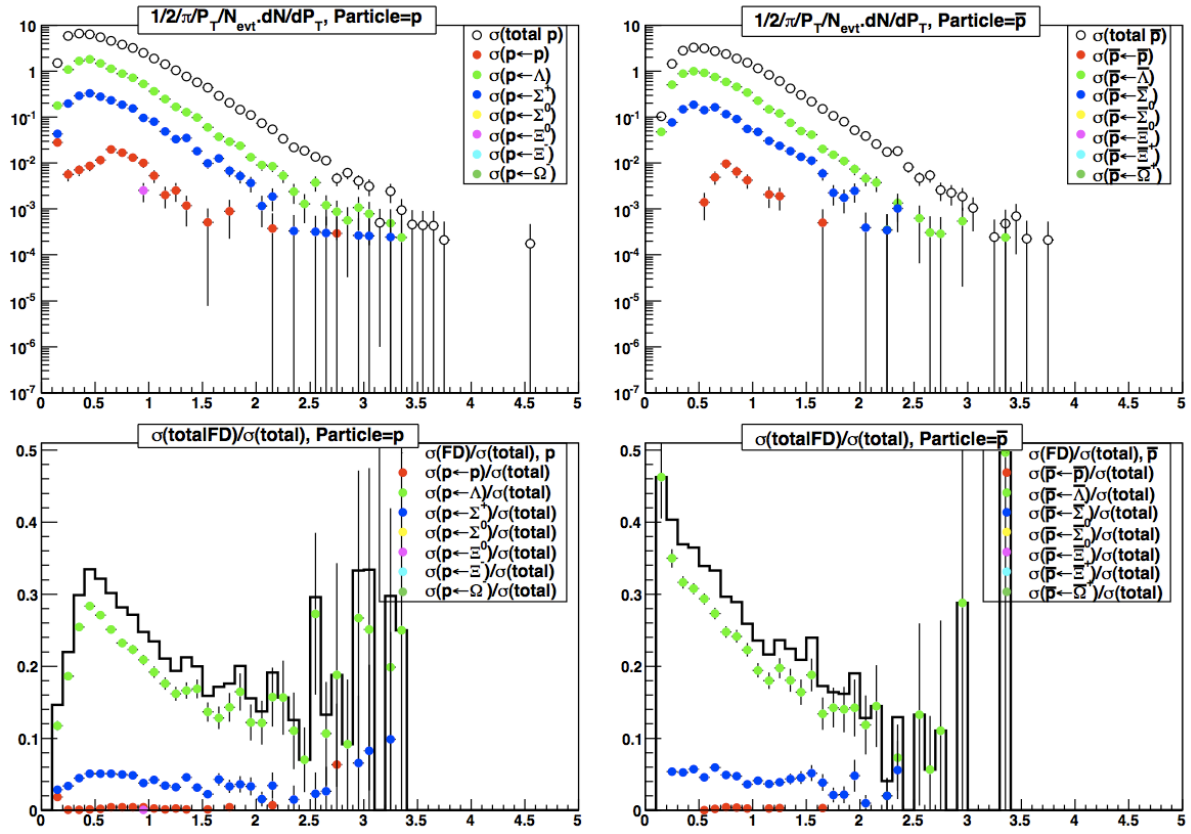


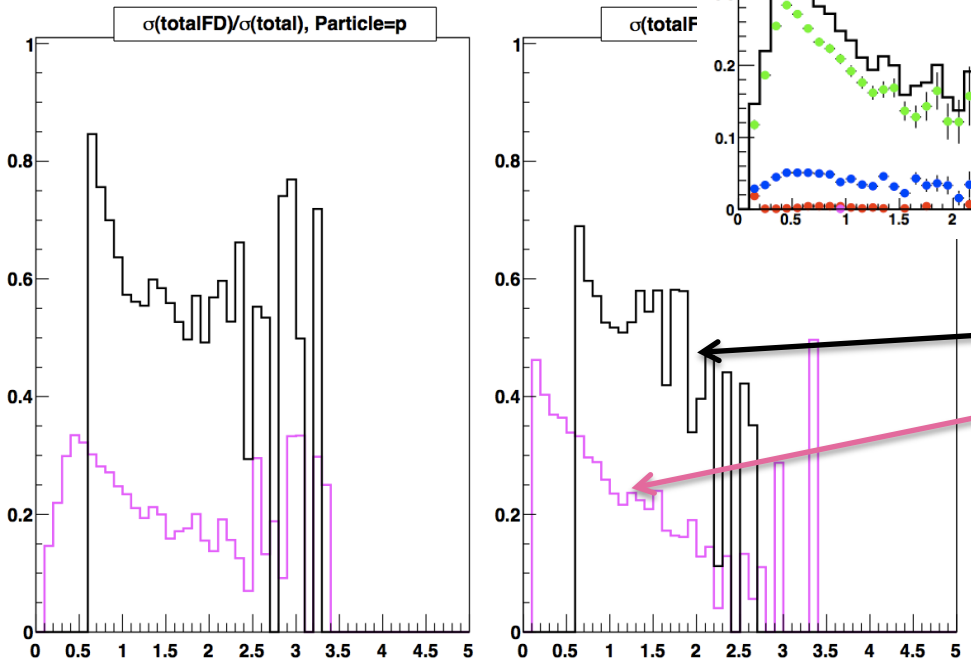
AFAIK no phenix hyperon spectra exist…..

Feeddown fractions (Au+Au 200 GeV central)

Here: UrQMD 3.3p1

also using Hijing
and
pythia for p+p





scaled to match published x-secs…
from simulation directly

…Scaled results from urqmd and hijing
do not match (?!?)
…I need to understand this…

19.6 GeV, present event totals and cuts

picoDSTs generated 36 hours ago from data61, data90, and data05

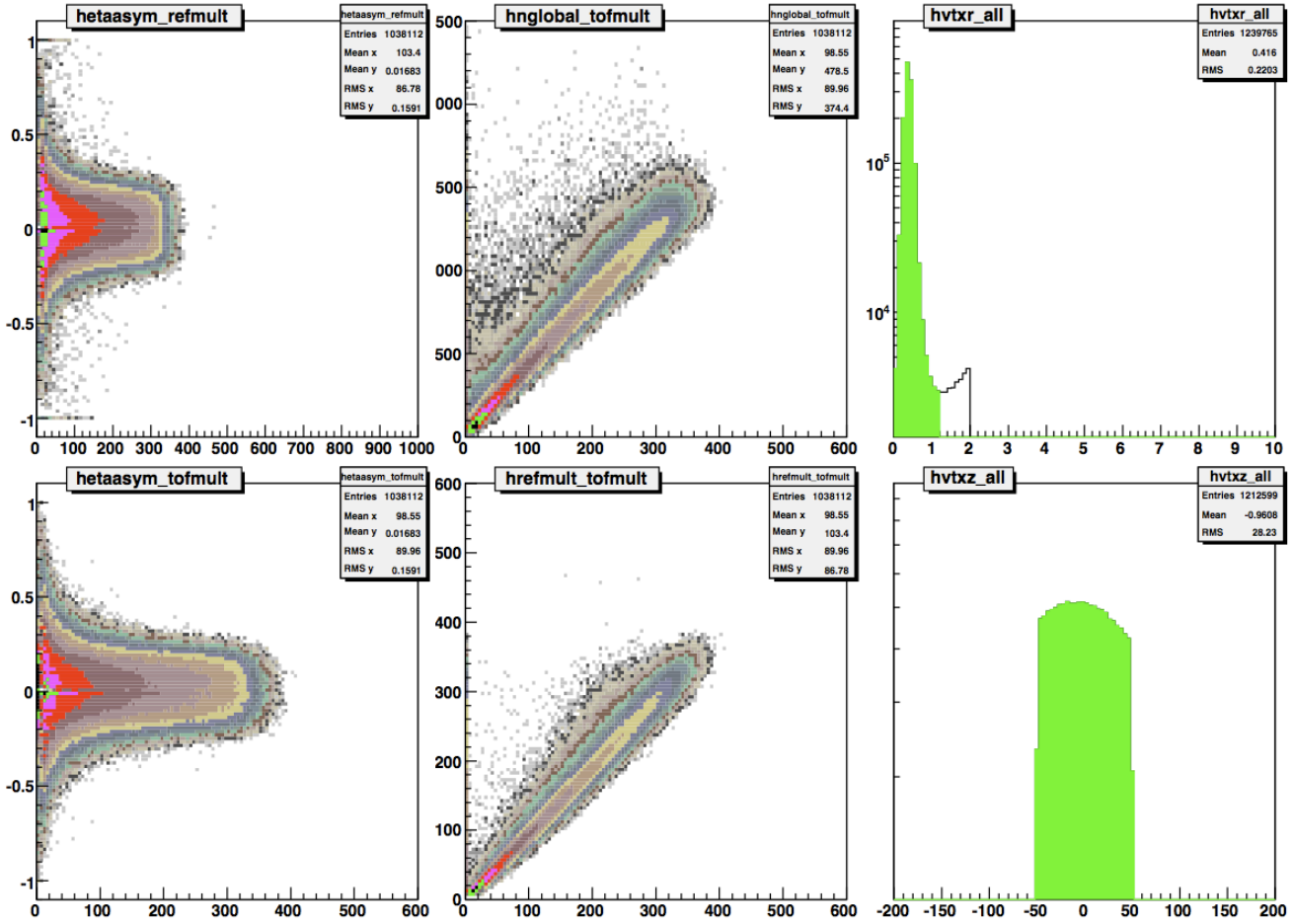
- ~1.2 M events total
- ~350k survive the good event cuts

Lots more data coming soon!

Zvtx < 50cm
Rvtx < 1.2cm
Ntofhits > 0

mb1-fast (3 trig IDs)
.OR.
mb1-slow (3 trig IDs)

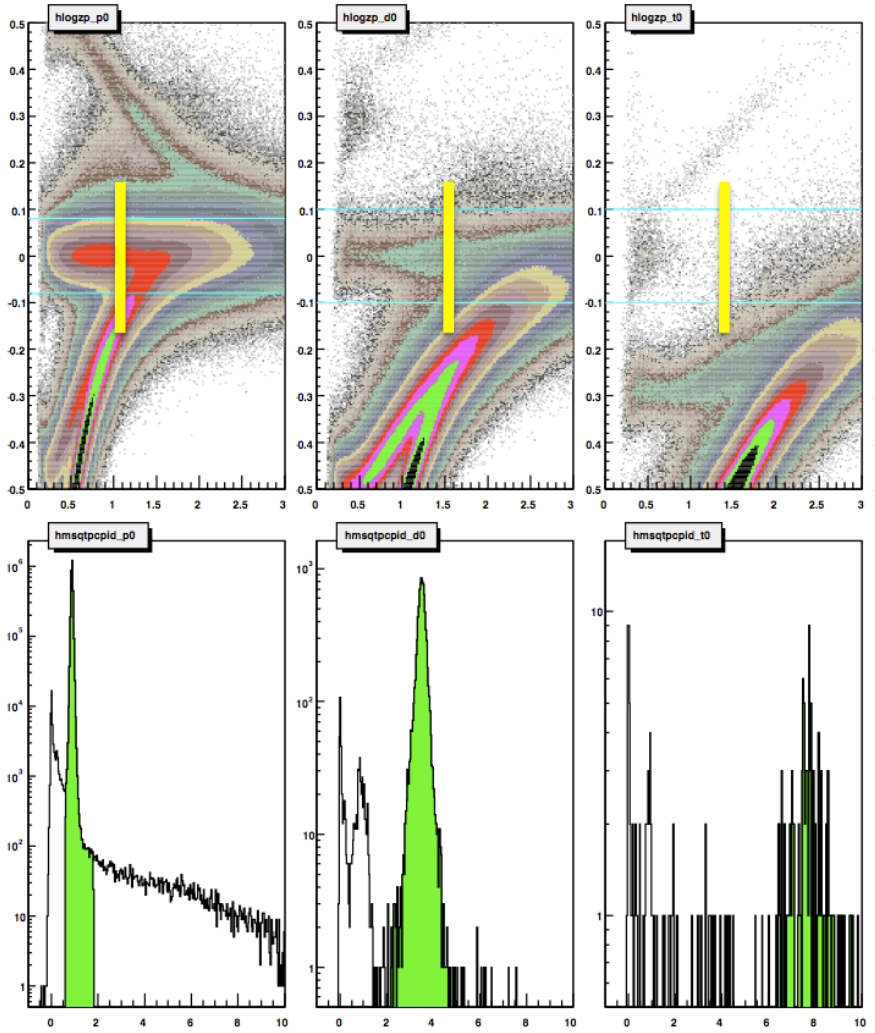
using Chris Anson's centrality windows…



bunchID shifts < 0.2% (consistent with no corruption)

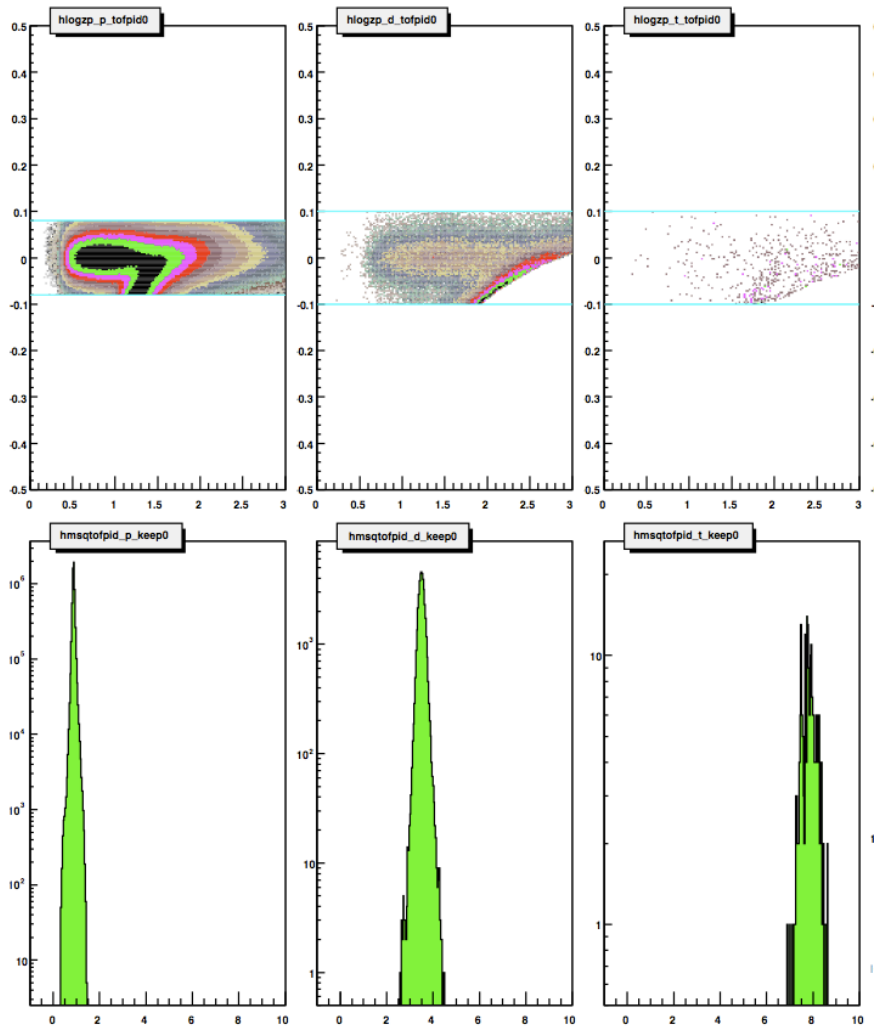
19.6 GeV, PID

"dE/dx minus TOF"



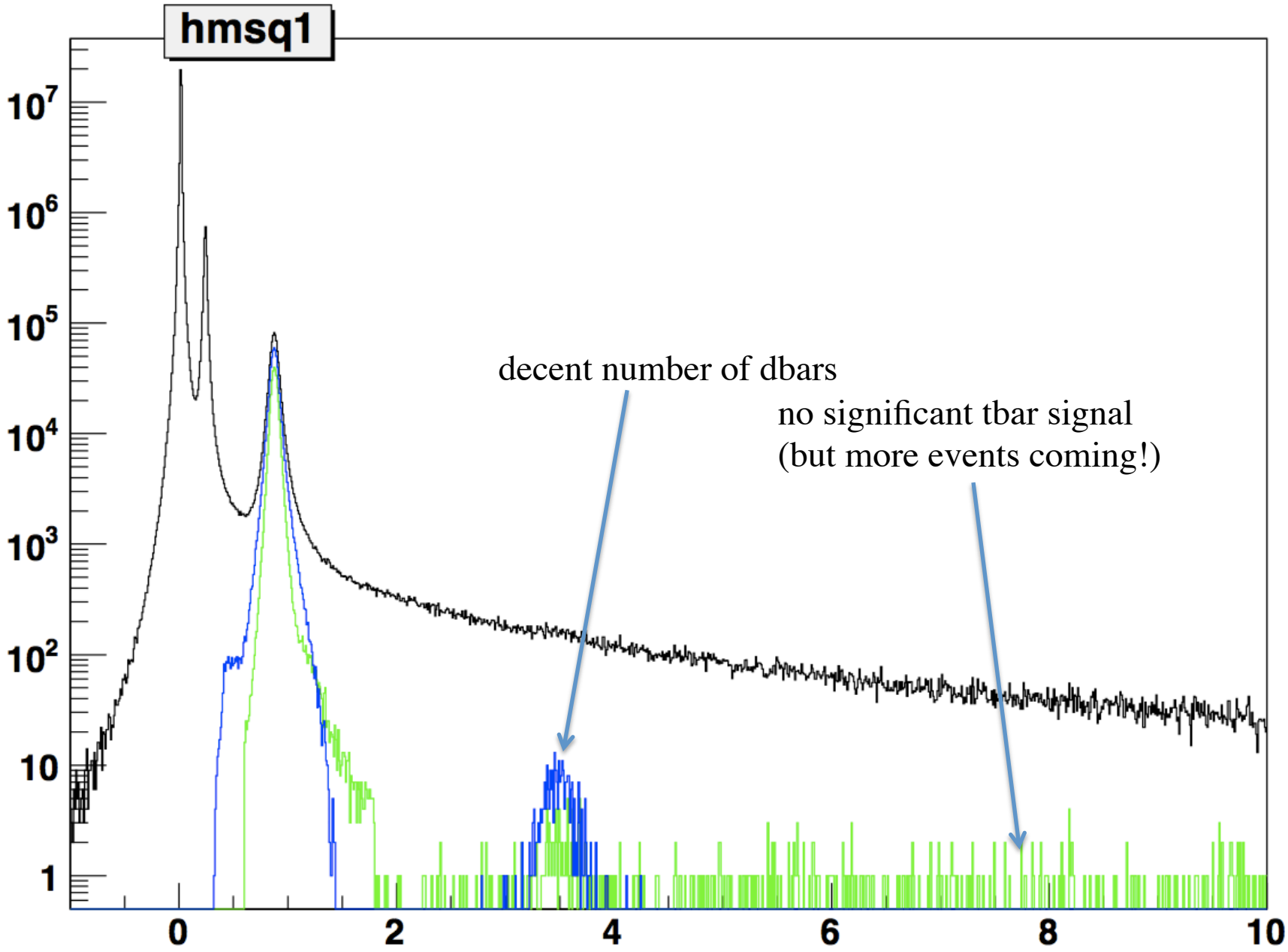
high efficiency, low mom'n reach

"dE/dx plus TOF"

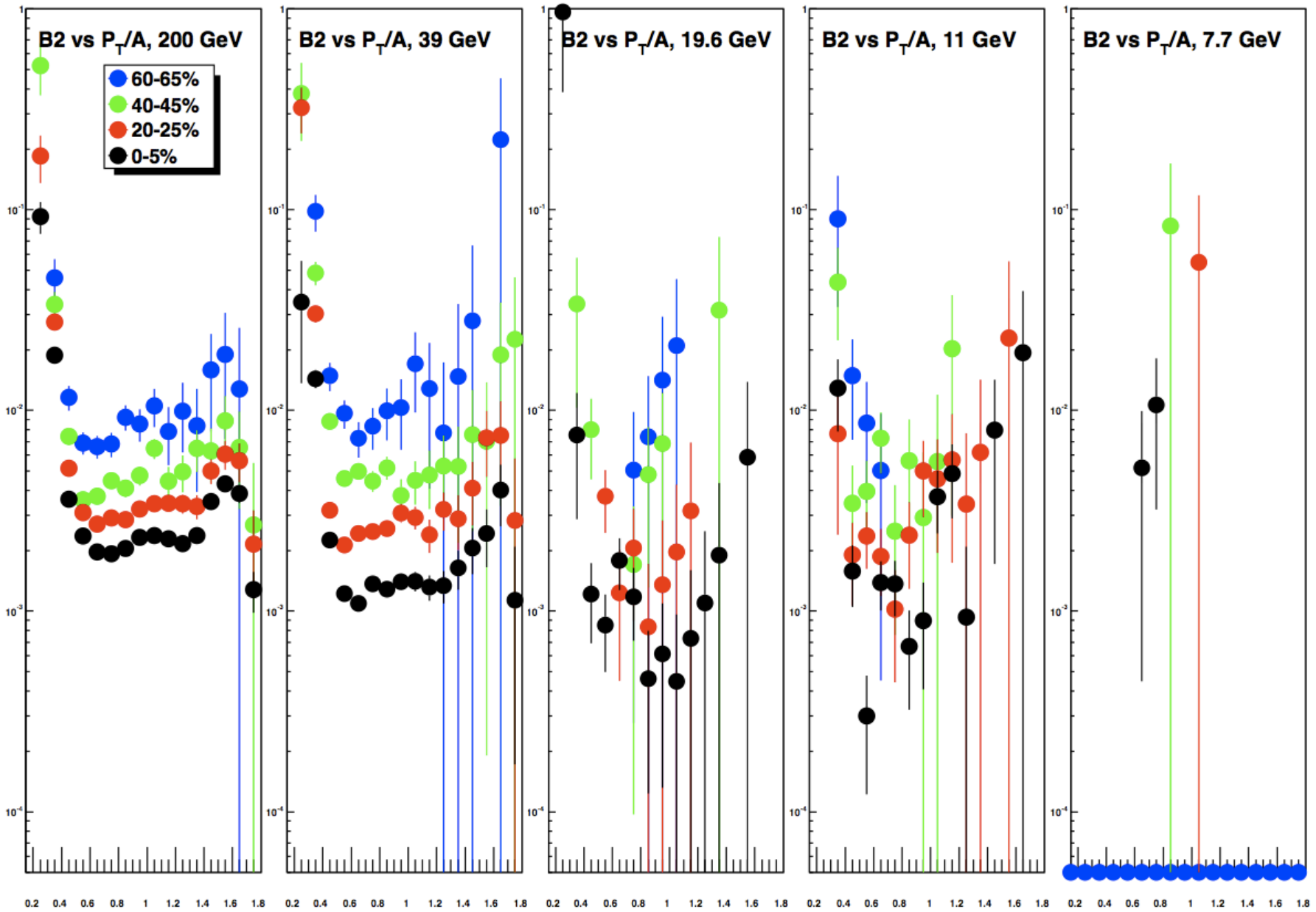


lower efficiency, high mom'n reach

19.6 GeV, Antiparticle Mass-Squared



Antiparticle B_2 vs P_T/A and root-s



P_T-averaged Source Radius vs root-s