14.11.2019

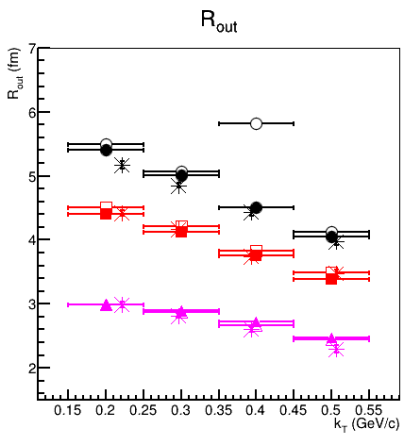
Mult Vs Impact for centrality definition
Mult(STAR)
Mult(UrQMD)

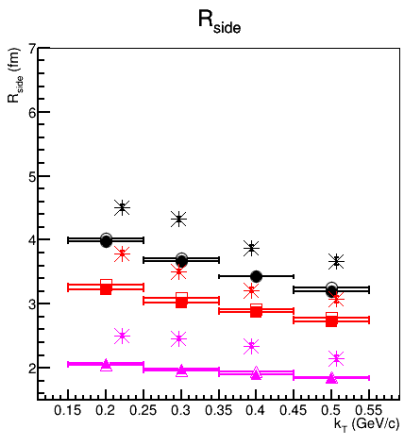
Impact Vs Mult (STAR)

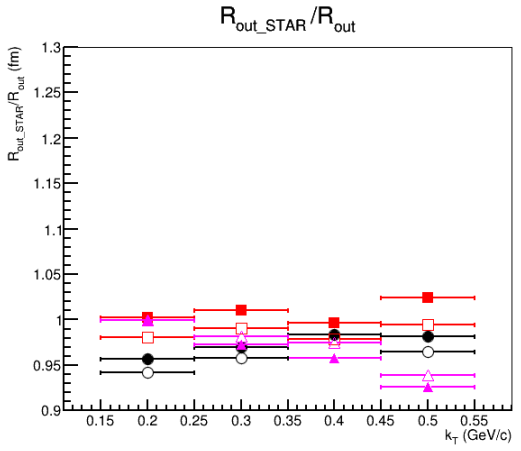
- http://web-docs.gsi.de/~misko/overlap/interface.html

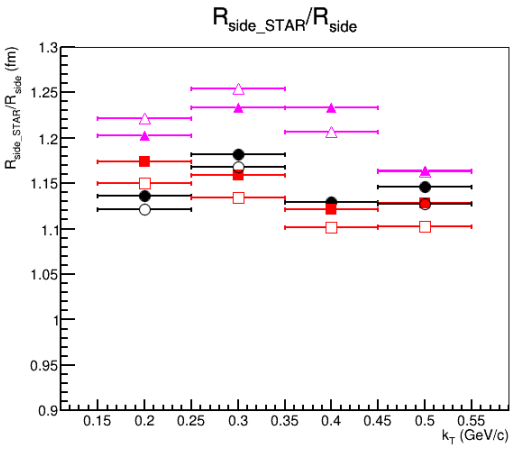
- 5-10%: 3.3 — 4.7 imp
- 20-30%: 6.6 — 8.1 imp
- 60-70%: 11.4 — 12.3 imp

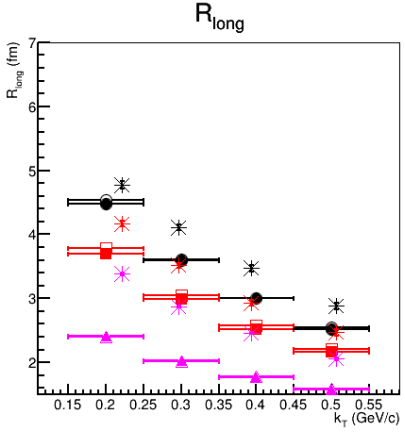
Hbt AuAu 7.7GeV

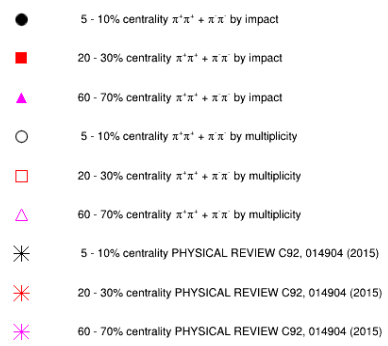


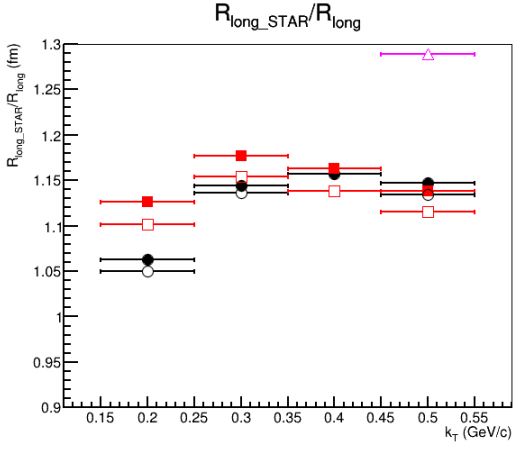






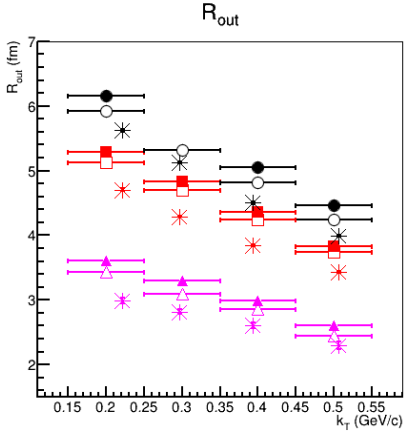


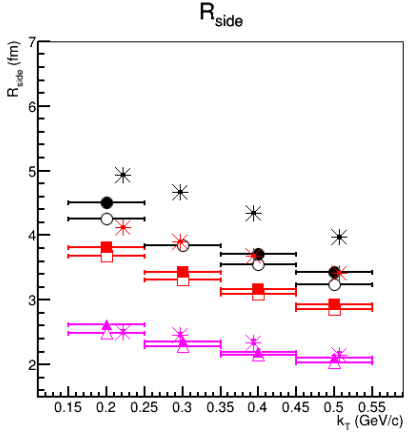


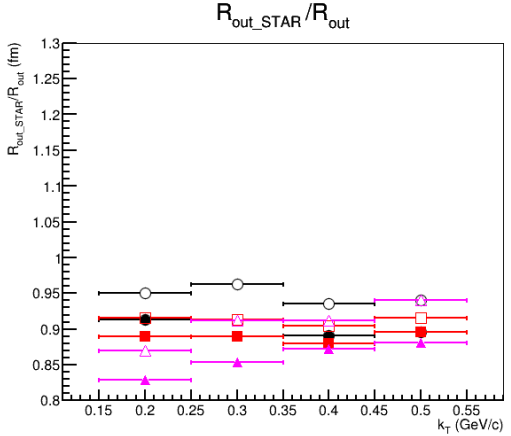


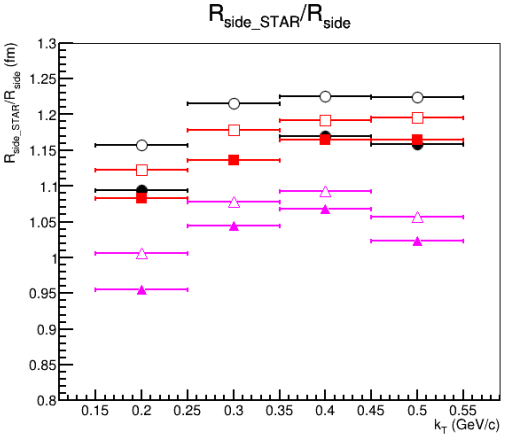
- 5 - 10% centrality R_{pub}/R_{impact}
- 20 - 30% centrality R_{pub}/R_{impact}
- 60 - 70% centrality R_{pub}/R_{impact}
- 5 - 10% centrality $R_{pub}/R_{multFromSTAR}$
- 20 - 30% centrality $R_{pub}/R_{multFromSTAR}$
- 60 - 70% centrality $R_{pub}/R_{multFromSTAR}$

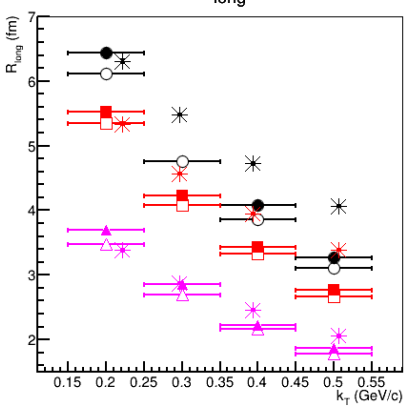
Hbt AuAu 200GeV

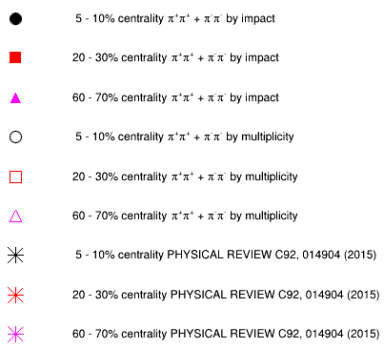


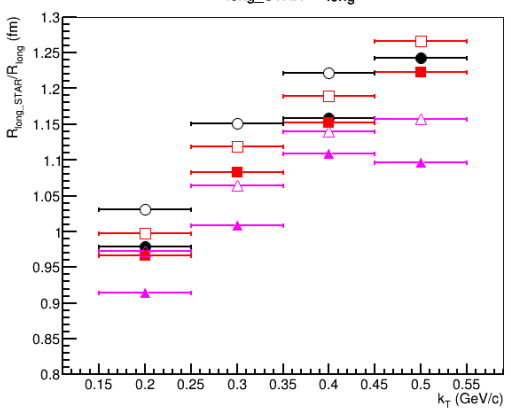


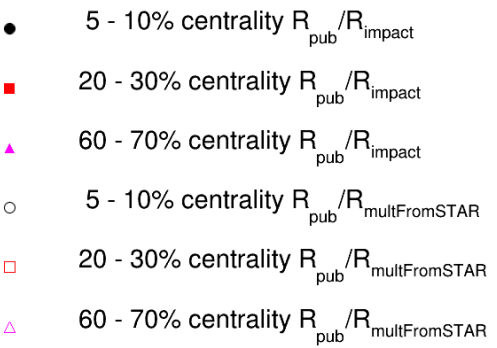












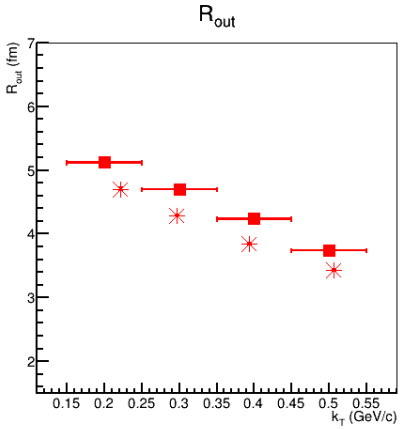
- Multiplicity in the experiment != Multiplicity in the model → multiplicity redefinition
- RefMult (pt > 0.1 GeV/c && |eta|<0.5) divde to 20(5%) range (have same integral)

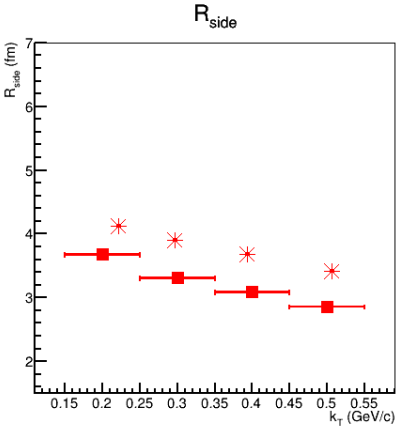
Mult(STAR) Vs Mult (UrQMD)

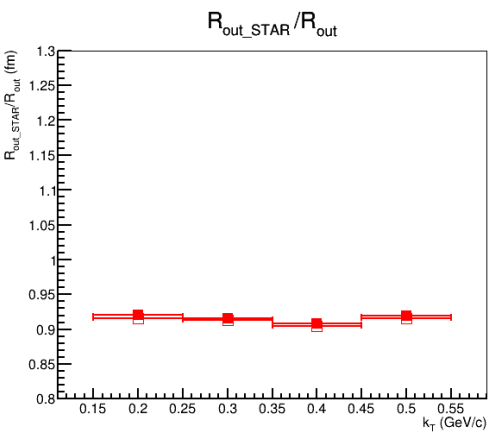
- UrQMD 200 GeV
- 5-10% multLo = 409; multHi = 499;
- 20-30% multLo = 184; multHi = 275;
- 60-70% multLo = 24; multHi = 42;
- UrQMD 7.7 GeV
- 5-10% multLo = 266; multHi = 323;
- 20-30% multLo = 124; multHi = 182;
- 60-70% multLo = 15; multHi = 24;

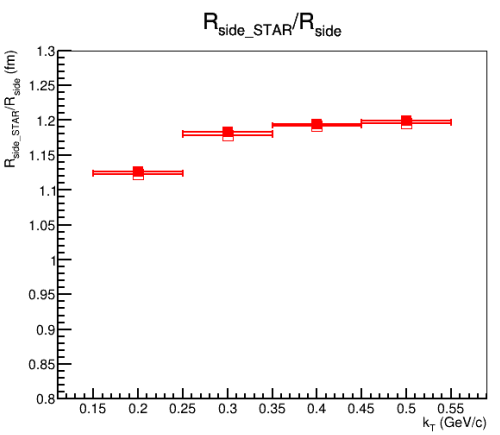
- STAR 200 GeV
- 5-10% multLo = 396; multHi = 466;
- 20-30% multLo = 193; multHi = 281;
- 60-70% multLo = 22; multHi = 43;
- STAR 7.7 GeV
- 5-10% multLo = 154; multHi = 185;
- 20-30% multLo = 72; multHi = 106;
- 60-70% multLo = 8; multHi = 16;

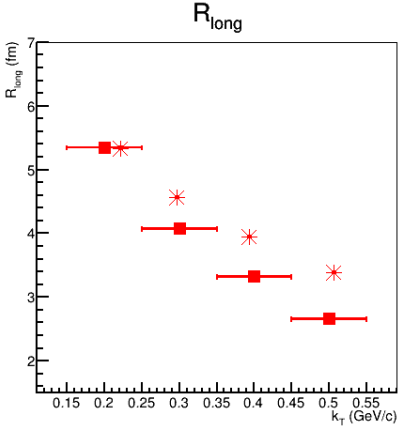
Hbt AuAu 7.7 GeV







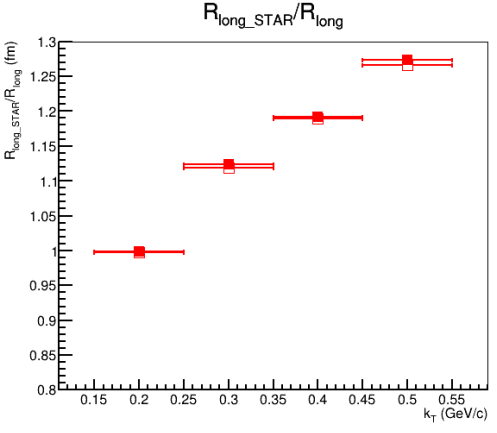




20 - 30% centrality $\pi^+\pi^+ + \pi^-\pi^-$ by UrQMD multiplicity

20 - 30% centrality $\pi^+\pi^+ + \pi^-\pi^-$ by multiplicity (STAR)

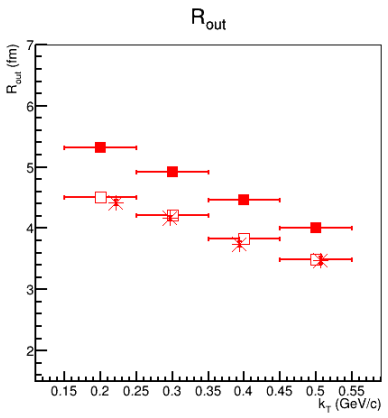
20 - 30% centrality PHYSICAL REVIEW C92, 014904 (2015)

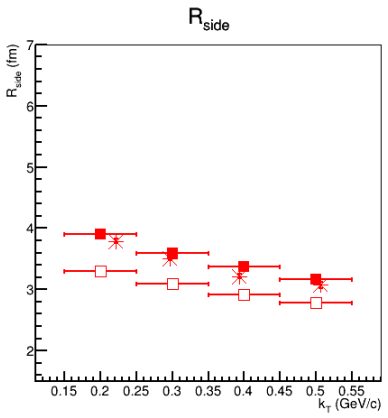


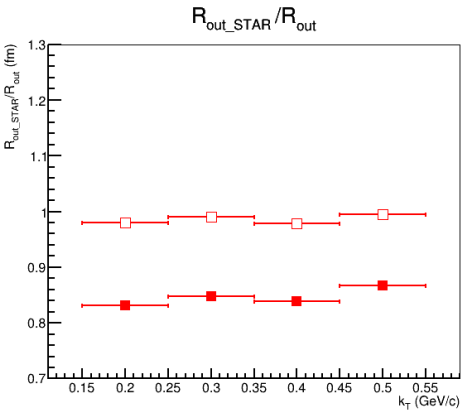
20 - 30% centrality $\frac{R_{pub}}{R_{multFromUrQMD}}$

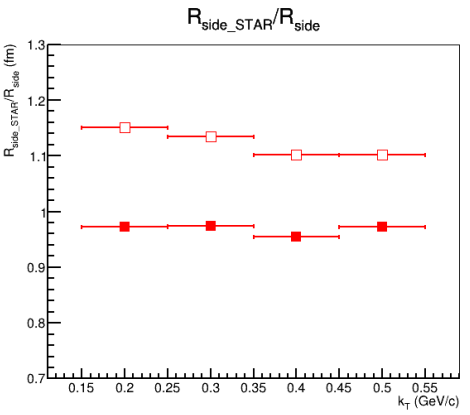
20 - 30% centrality $\frac{R_{pub}}{R_{multFromSTAR}}$

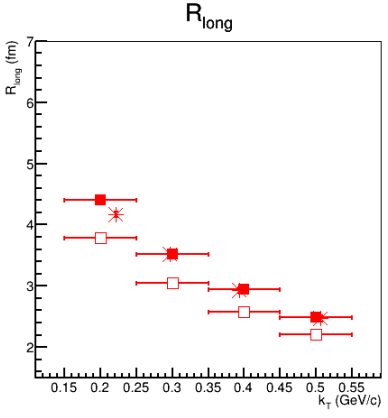
Hbt AuAu 200 GeV

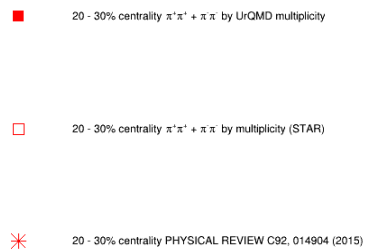


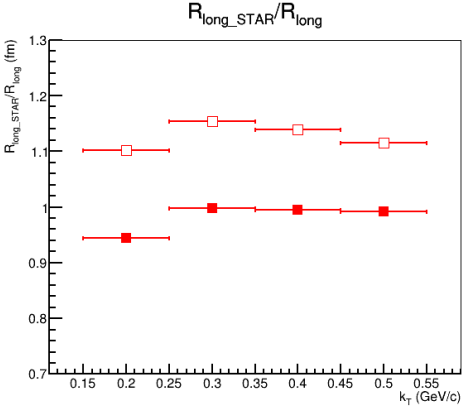












20 - 30% centrality $\frac{R_{pub}}{R_{multFromUrQMD}}$

20 - 30% centrality $\frac{R_{pub}}{R_{multFromSTAR}}$

Summary

- UrQMD mult Vs impact:
  - R(mult) ~ R(impact) (diff < 3% for 7.7GeV and diff < 3% for 200GeV)
  - R(exp)/R(urqmd) < 30%
- UrQMD mult. Vs STAR mult.:
  - for 7.7 GeV no difference (<1%)
  - for 200 GeV up to 20% difference between UrQMD mult. and STAR mult.