Статус модели PHSD для области энергий NICA

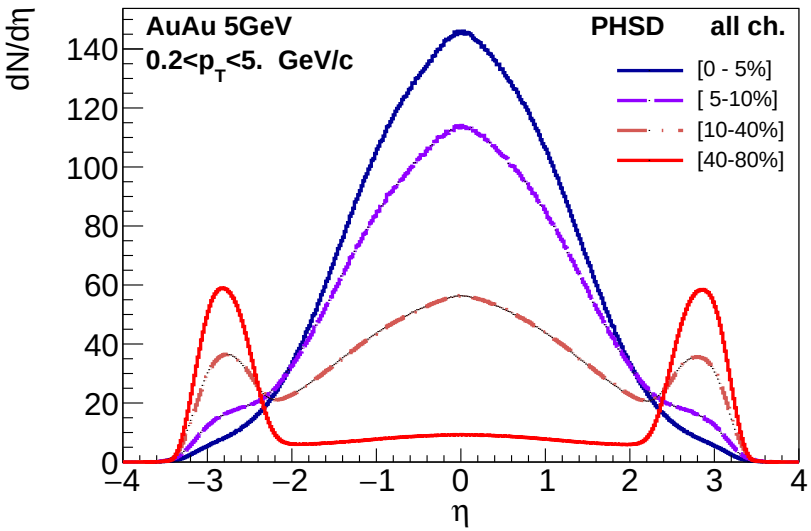
В.Воронюк

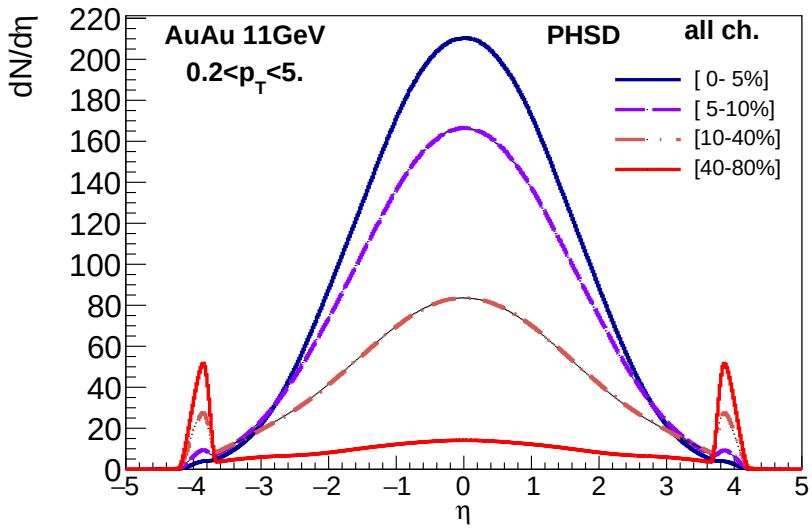
08 июня 2018

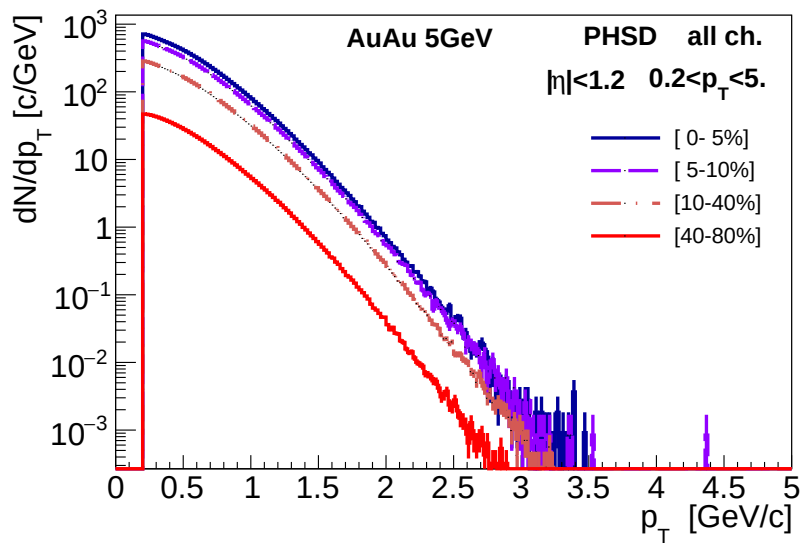
Cuts

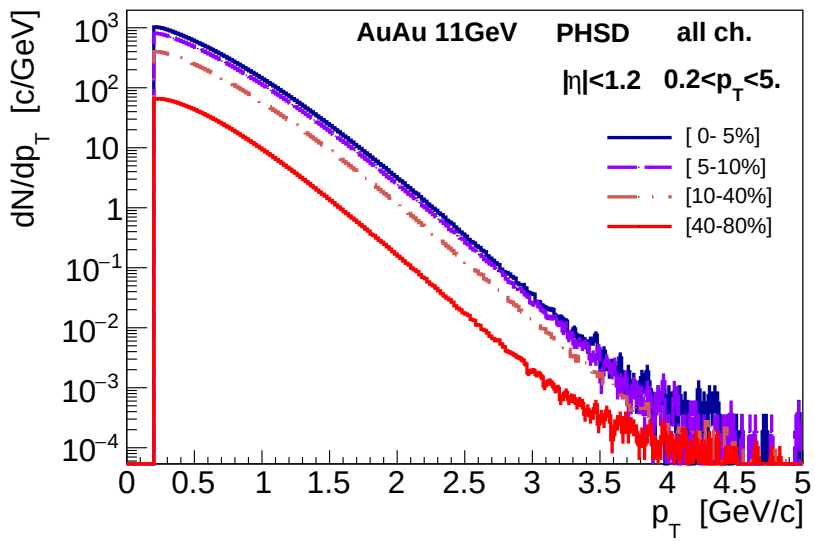
- $|\eta| < 1.2$
- $0.2\,GeV/c < p_T < 5\,GeV/c$

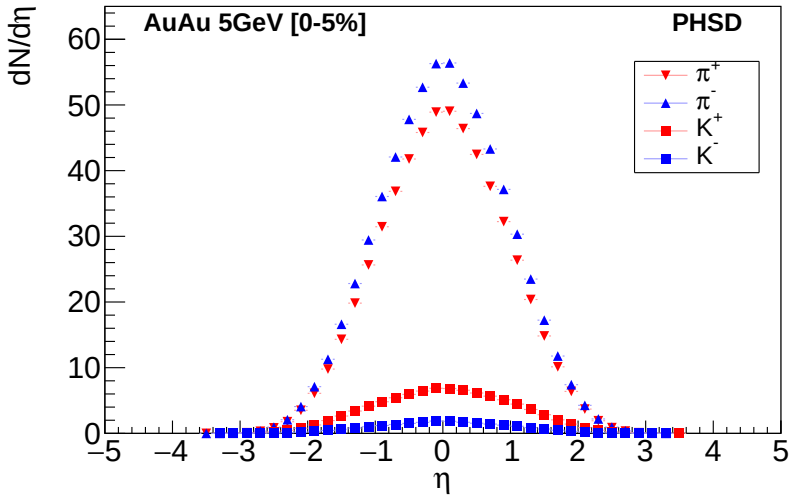
Глобальные наблюдаемые

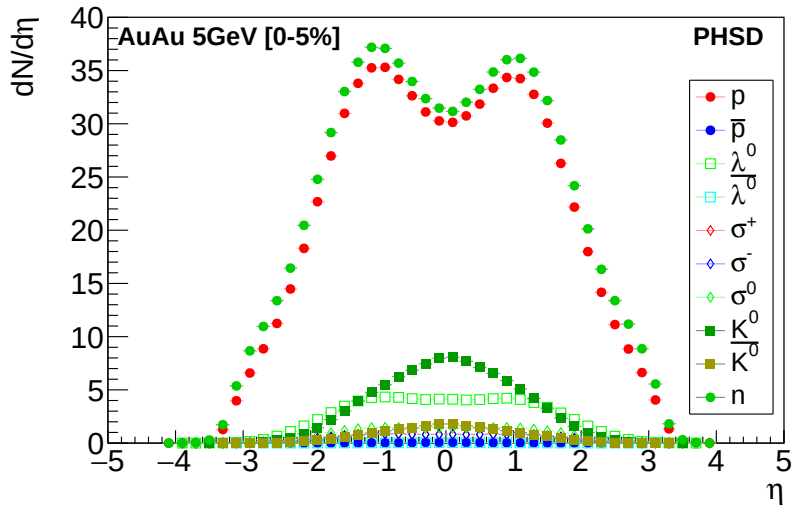


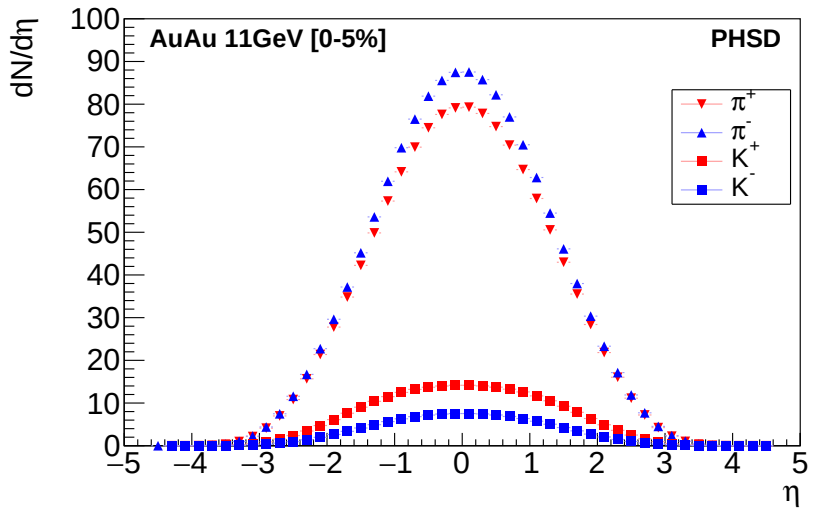


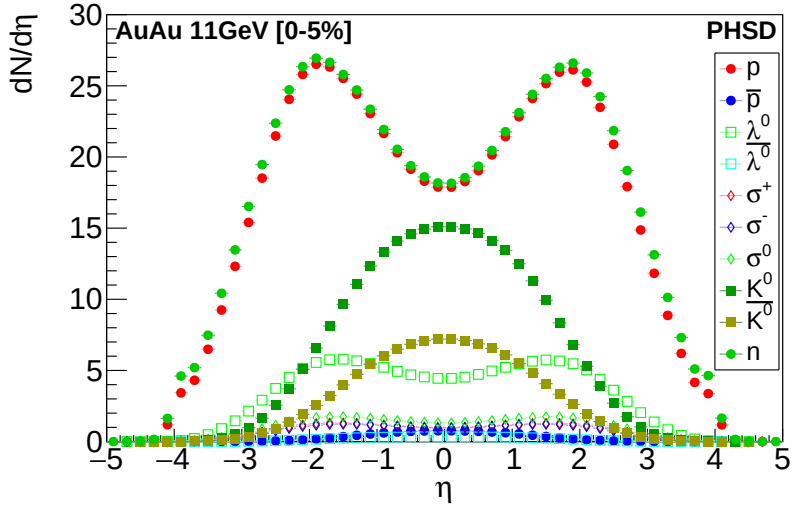




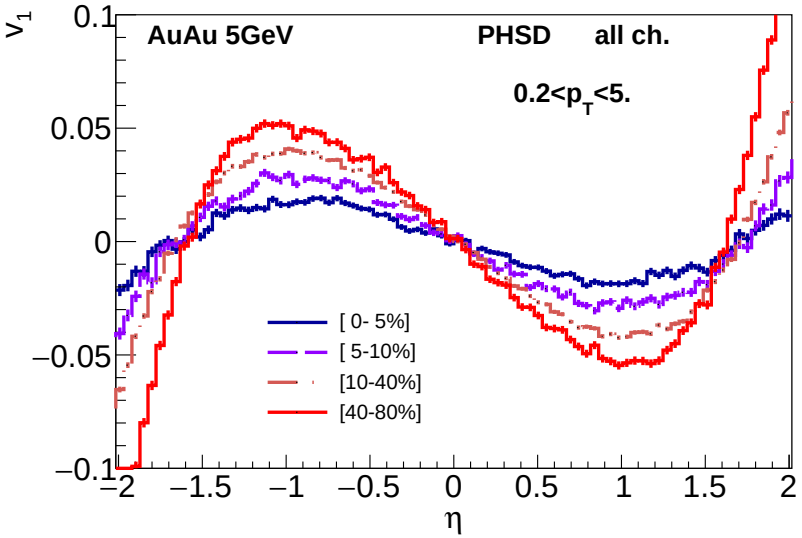

AuAu 5GeV [0-5%]
PHSD
dN/dη
η
π+
π-
K+
K-

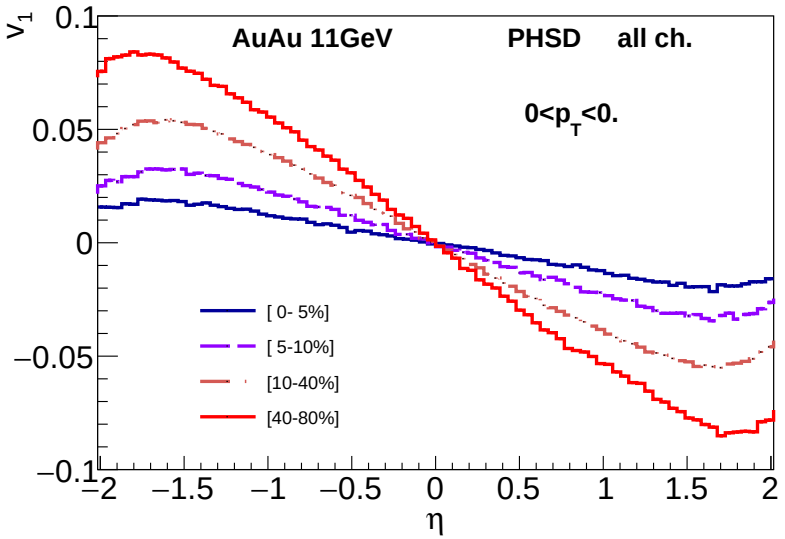

AuAu 5GeV [0-5%]
PHSD
dN/dη
η
p
p̄
Λ̄0
Λ
σ+
σ-
σ0
K̄0
K0
n

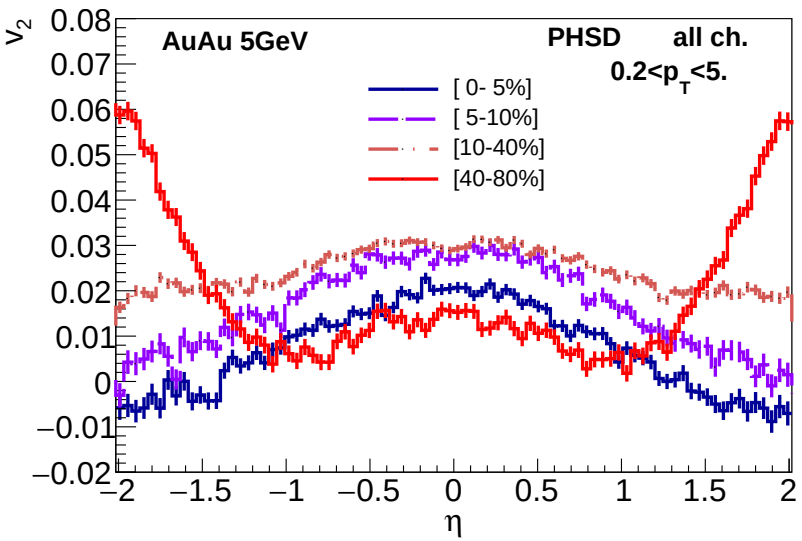

AuAu 11GeV [0-5%]
PHSD
dN/dη
η
π+
π-
K+
K-

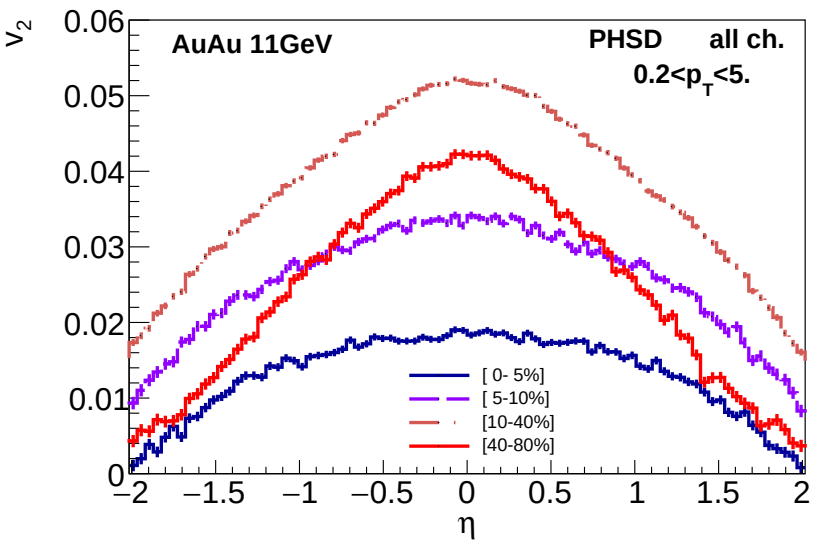

AuAu 11GeV [0-5%]
PHSD
dN/dη
η
p
p̄
Λ̄0
Λ
σ+
σ-
σ0
K̄0
K0
n

Потоки

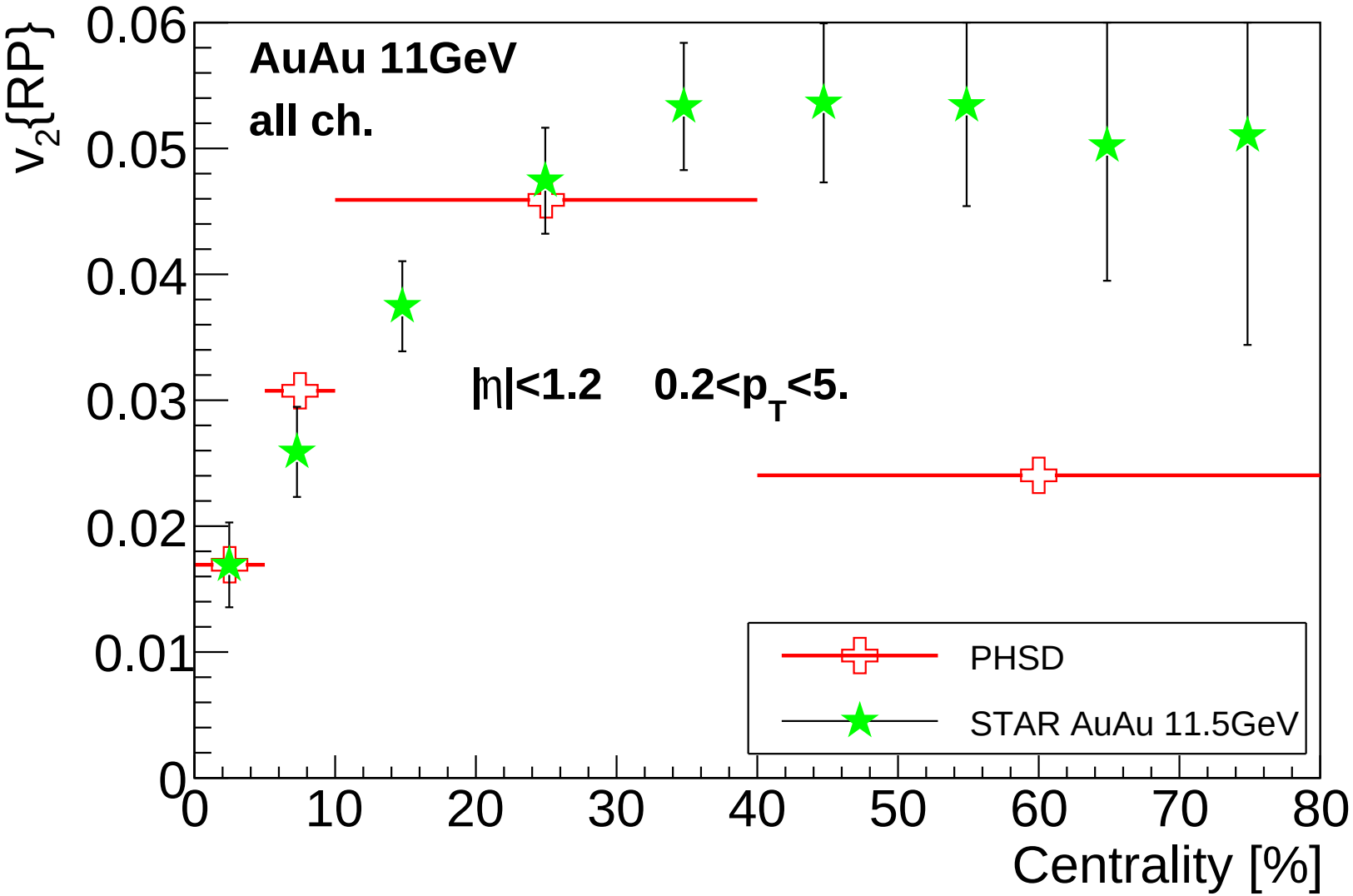

AuAu 5GeV
PHSD all ch.
0.2<p_T<5.
[0- 5%]
[5-10%]
[10-40%]
[40-80%]
v_1
η


AuAu 11GeV
PHSD all ch.
0<p_T<0.
[0- 5%]
[5-10%]
[10-40%]
[40-80%]
v_1
η

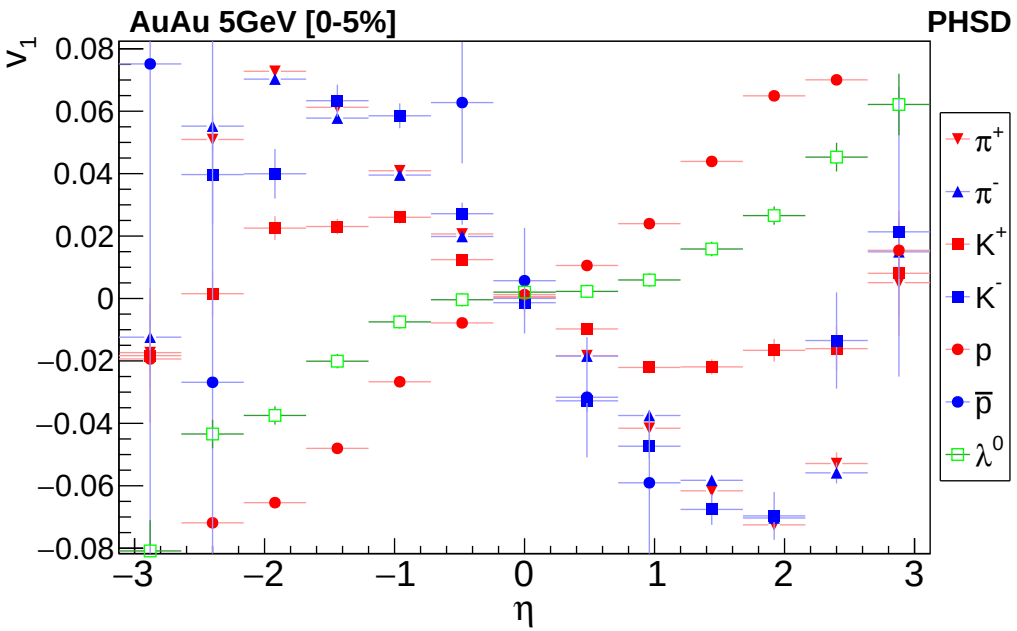

AuAu 5GeV
PHSD all ch.
0.2<p_T<5.
[0- 5%]
[5-10%]
[10-40%]
[40-80%]
v_2
η

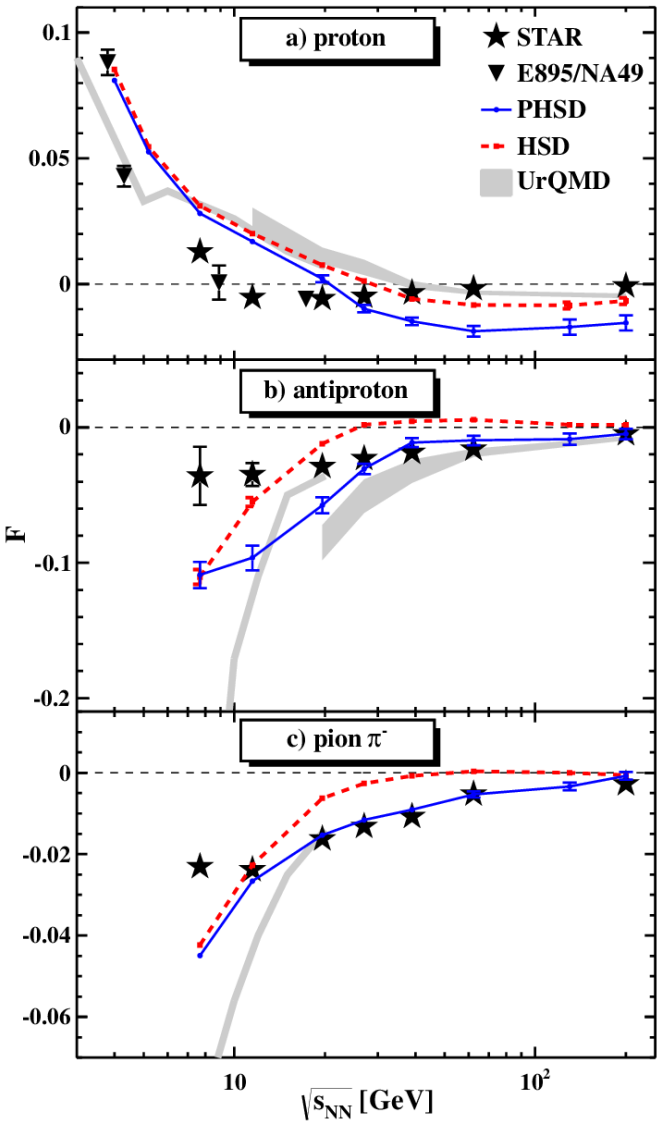

AuAu 11GeV
PHSD all ch.
0.2<p_T<5.
[0- 5%]
[5-10%]
[10-40%]
[40-80%]
v_2
η

v2: PHSD vs STAR



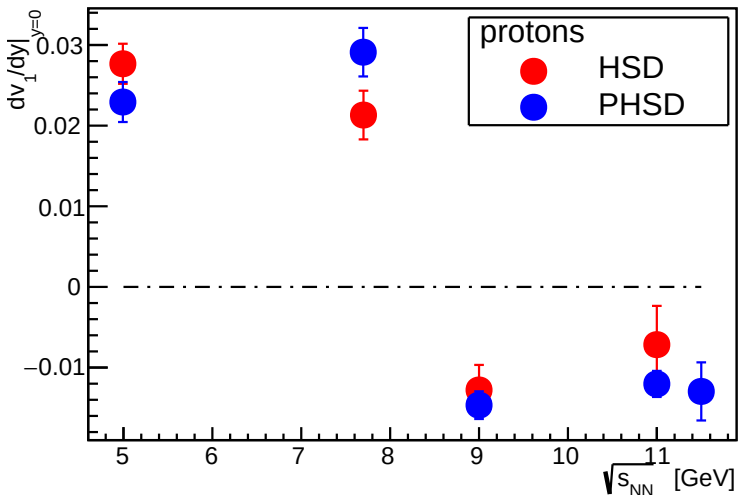
v1: Slope

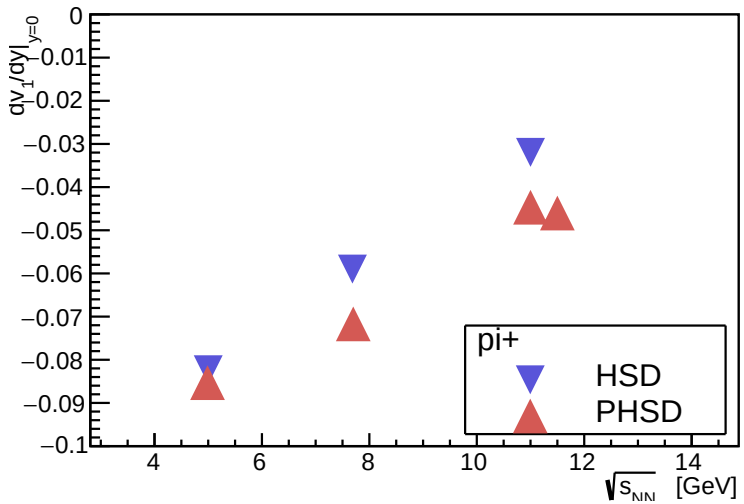

AuAu 5GeV [0-5%]
PHSD
v1
η
π+
π-
K+
K-
p
p̄
λ0

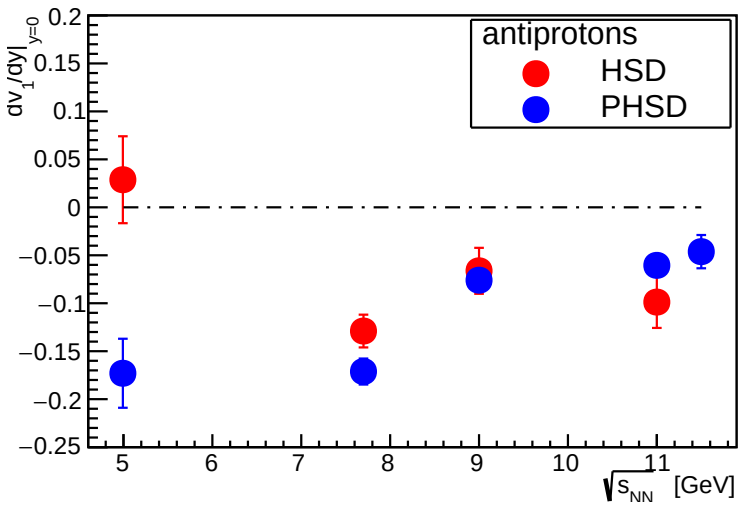

a) proton
b) antiproton
c) pion π-
STAR
E895/NA49
PHSD
HSD
UrQMD
F
√sNN [GeV]

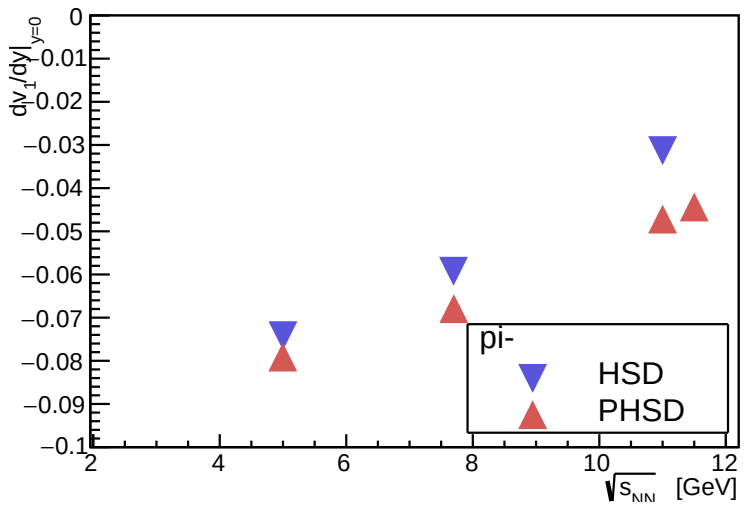
v1: Slope

AuAu [10-40%]







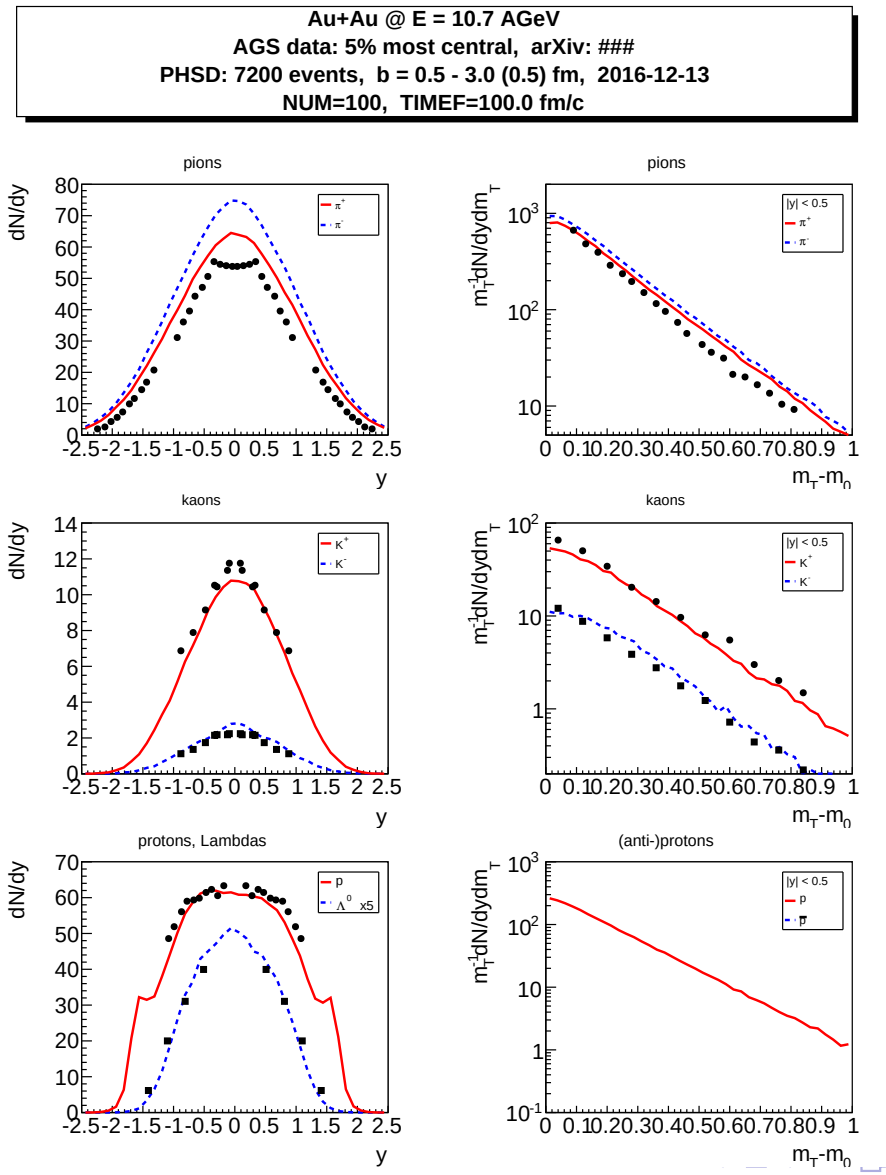


Заключение

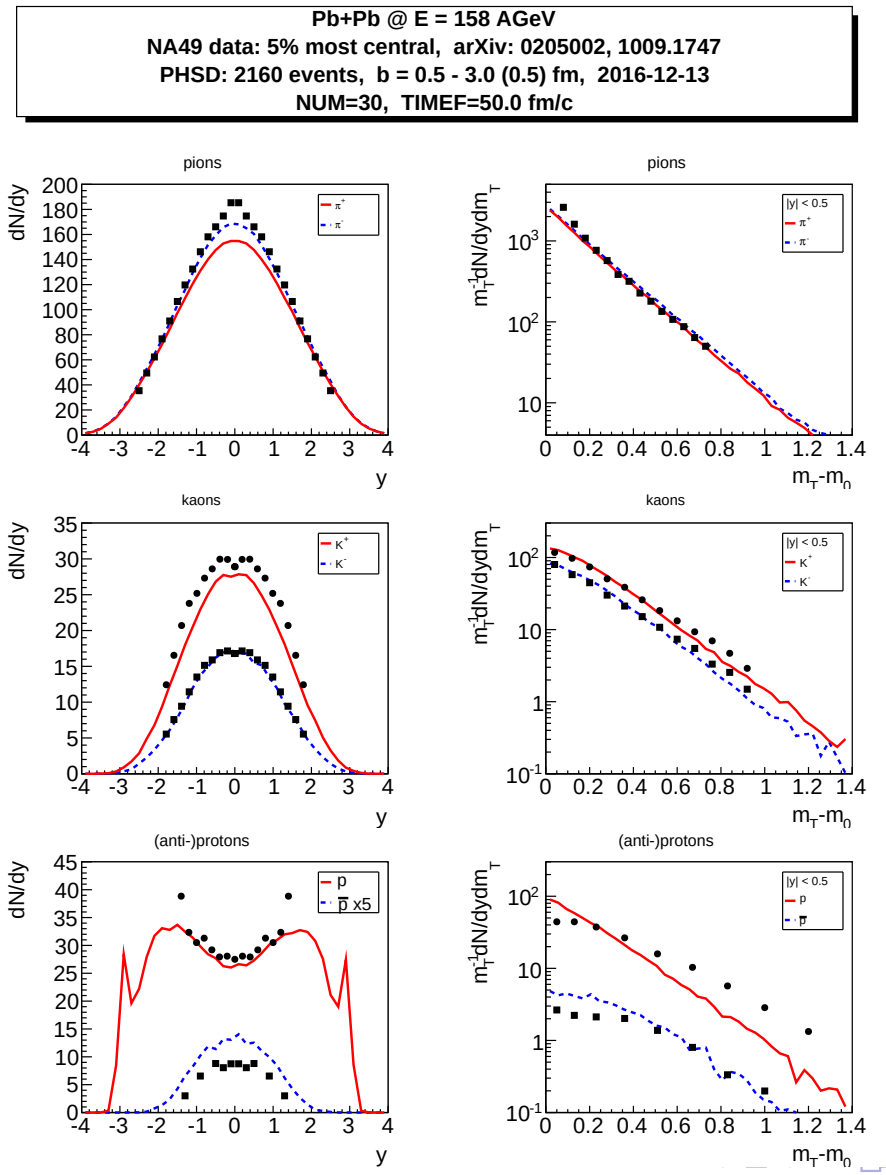
- Модель хорошо описывает потоки и демонстрирует пересечение оси для наклона прямого потока.
- Периферические столкновения требуют дополнительного анализа.

Спасибо за внимание.

validation


Au+Au @ E = 10.7 AGeV
AGS data: 5% most central, arXiv: ###
PHSD: 7200 events, b = 0.5 - 3.0 (0.5) fm, 2016-12-13
NUM=100, TIMEF=100.0 fm/c
pions
dN/dy
y
pions
$m_T^{-1}dN/dydm_T$
m_T-m_0
|y| < 0.5
kaons
dN/dy
y
kaons
$m_T^{-1}dN/dydm_T$
m_T-m_0
|y| < 0.5
protons, Lambdas
dN/dy
y
(anti-)protons
$m_T^{-1}dN/dydm_T$
m_T-m_0
|y| < 0.5

validation


Pb+Pb @ E = 158 AGeV
NA49 data: 5% most central, arXiv: 0205002, 1009.1747
PHSD: 2160 events, b = 0.5 - 3.0 (0.5) fm, 2016-12-13
NUM=30, TIMEF=50.0 fm/c
pions
dN/dy
y
pions
$m_T^{-1}dN/dydm_T$
m_T-m_0
|y| < 0.5
kaons
kaons
(anti-)protons
p
$\bar{p}$ x5
(anti-)protons