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Work mainly by MICHAL PETRAN, Arizona,
further collaborators:
Jean Letessier (Paris) and Vojtech Petracek (Prague)

FIRST FIT

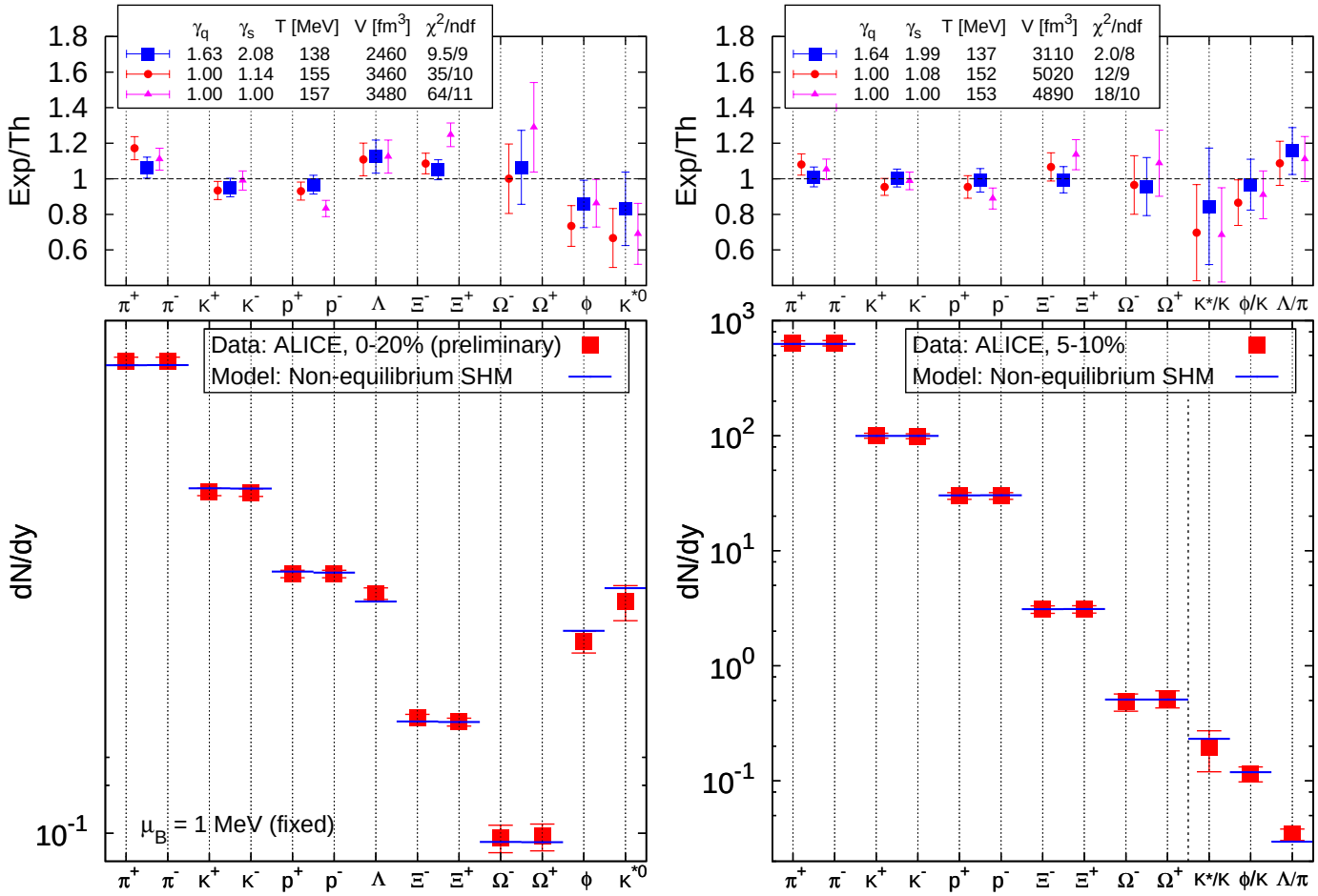


Figure: The non-equilibrium SHM fit to LHC-ALICE data; left panel shows 0–20% centrality, right panel shows 1/4 of this, 5–10%. The upper parts show the ratio of model to experimental data for non-equilibrium, semi-equilibrium and equilibrium models.

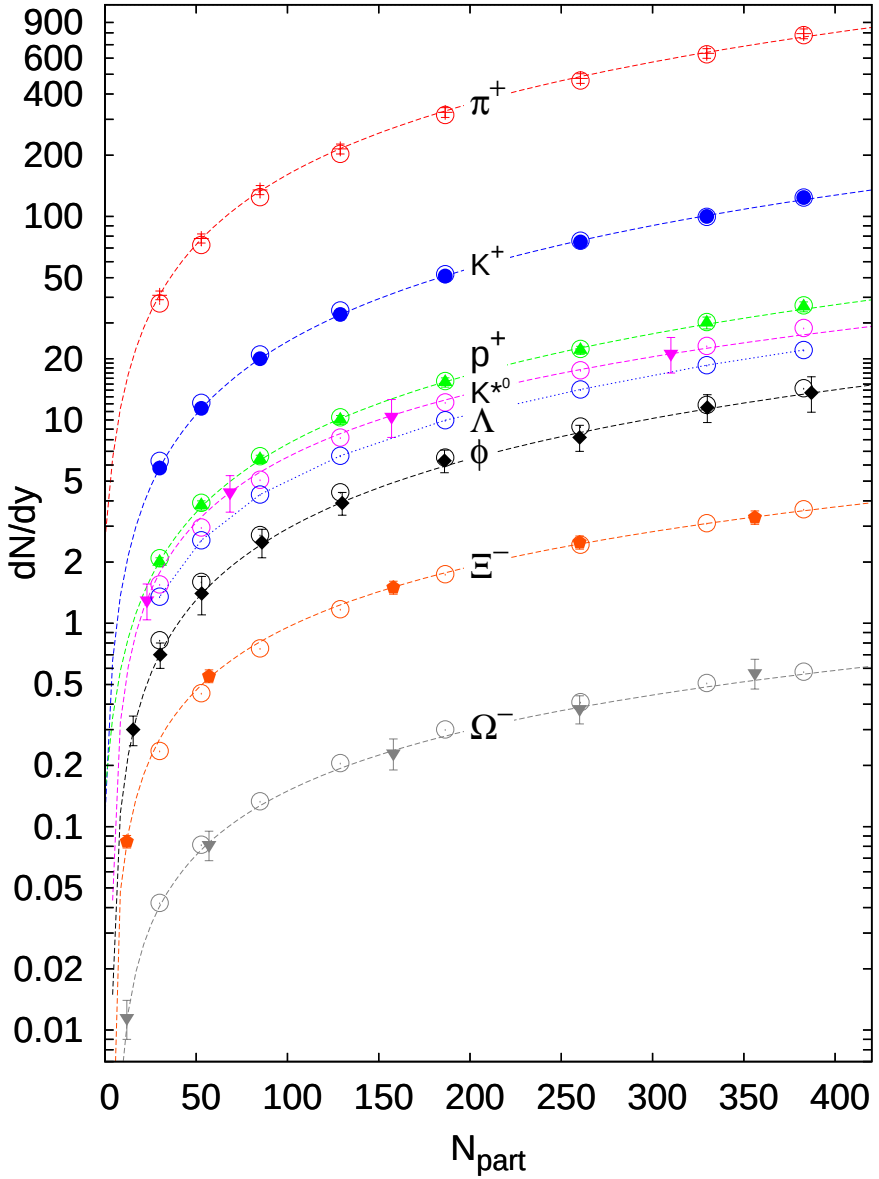
FITTED PARTICLES

a

b

c

d



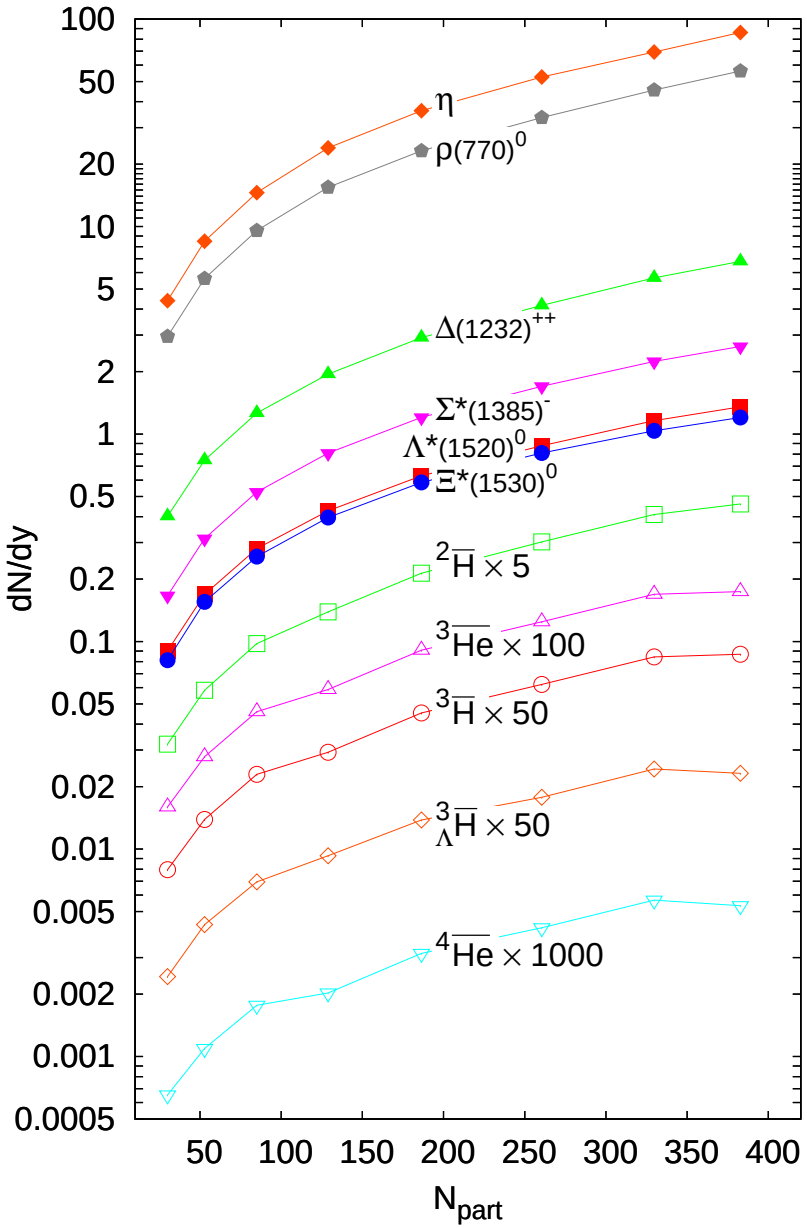
PREDICTED PARTICLES

a

b

c

d



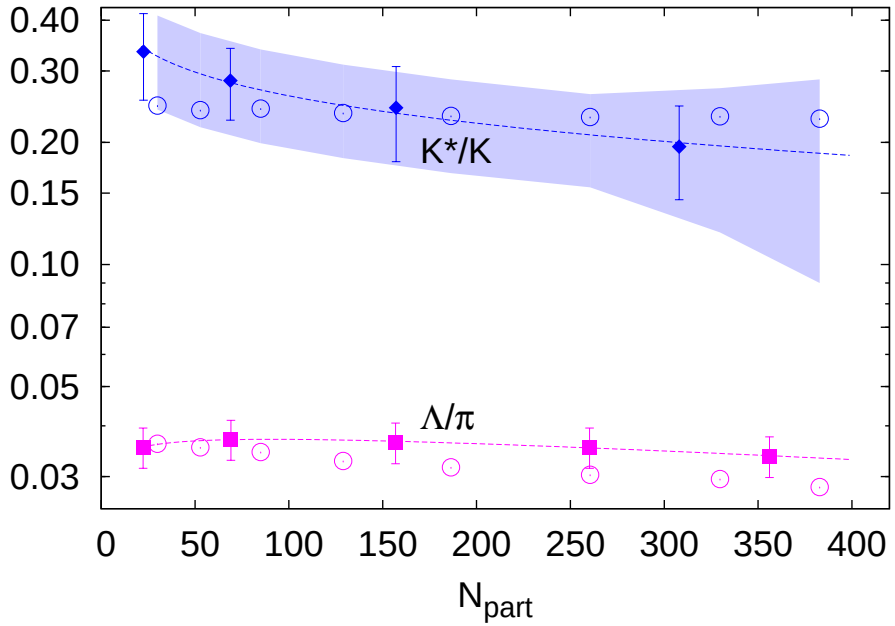
RATIOS

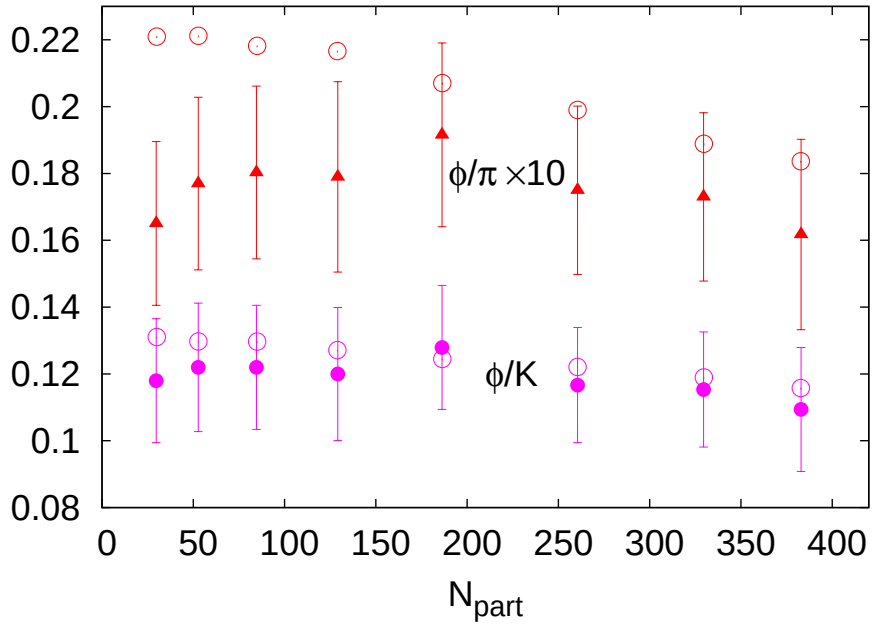
a

b

c

d


0.40
0.30
0.20
0.15
0.10
0.07
0.05
0.03
K*/K
Λ/π
0
50
100
150
200
250
300
350
400
N_part


0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
φ/π ×10
φ/K
0
50
100
150
200
250
300
350
400
N_part

FIT QUALITY

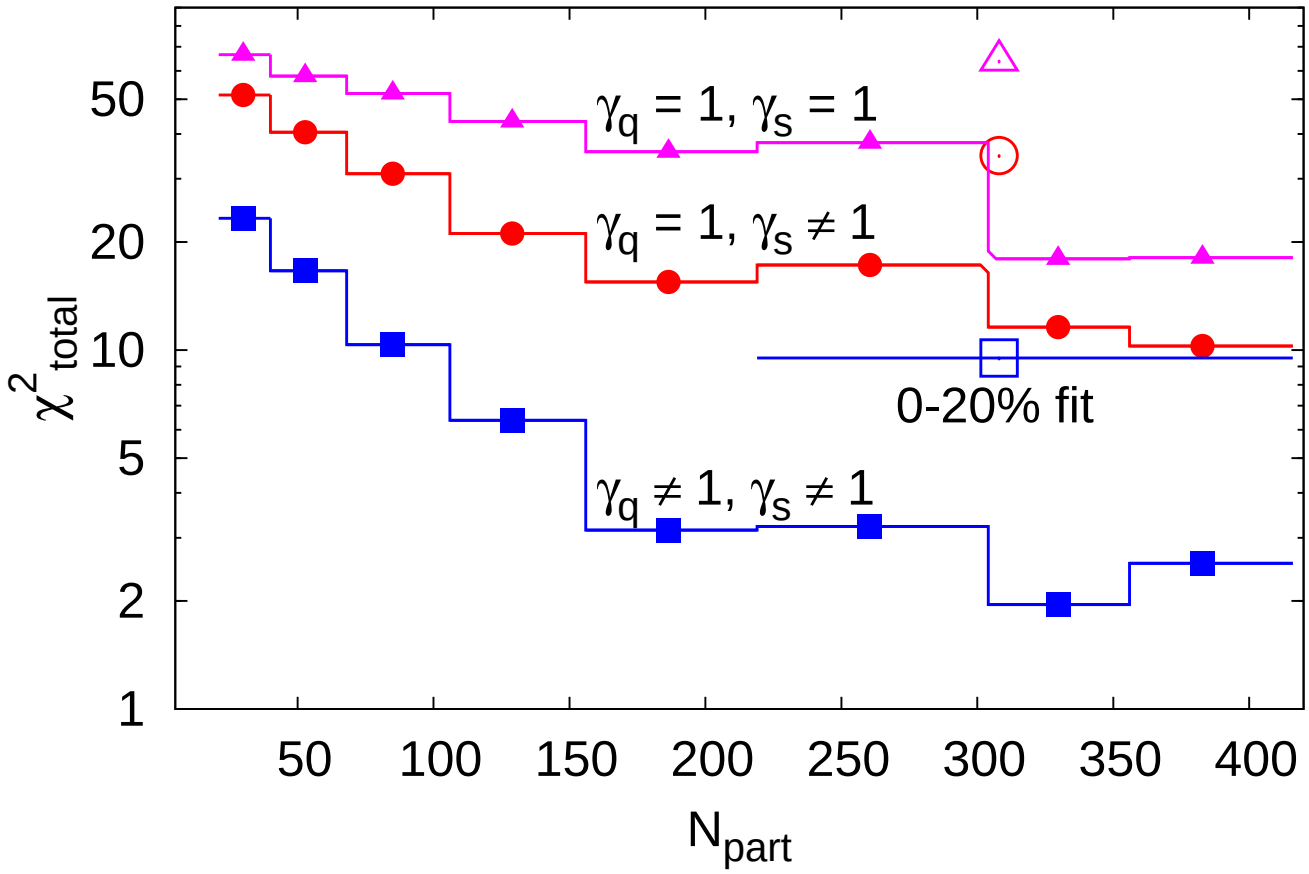


Figure: Total χ^2 on logarithmic scale as a function of centrality for the total equilibrium model ($\gamma_q = \gamma_s = 1$, $\mathrm{ndf} = 10$), for the semi-equilibrium ($\gamma_q = 1$, $\gamma_s \neq 1$, $\mathrm{ndf} = 9$) and non-equilibrium ($\gamma_q \neq 1$, $\gamma_s \neq 1$, $\mathrm{ndf} = 8$) fits. Open symbols represent the total χ^2 of the ALICE motivated fit in 0-20% centrality bin ($\mathrm{ndf} = 11, 10, 9$).

LIGHT QUARK EQUILIBRIUM

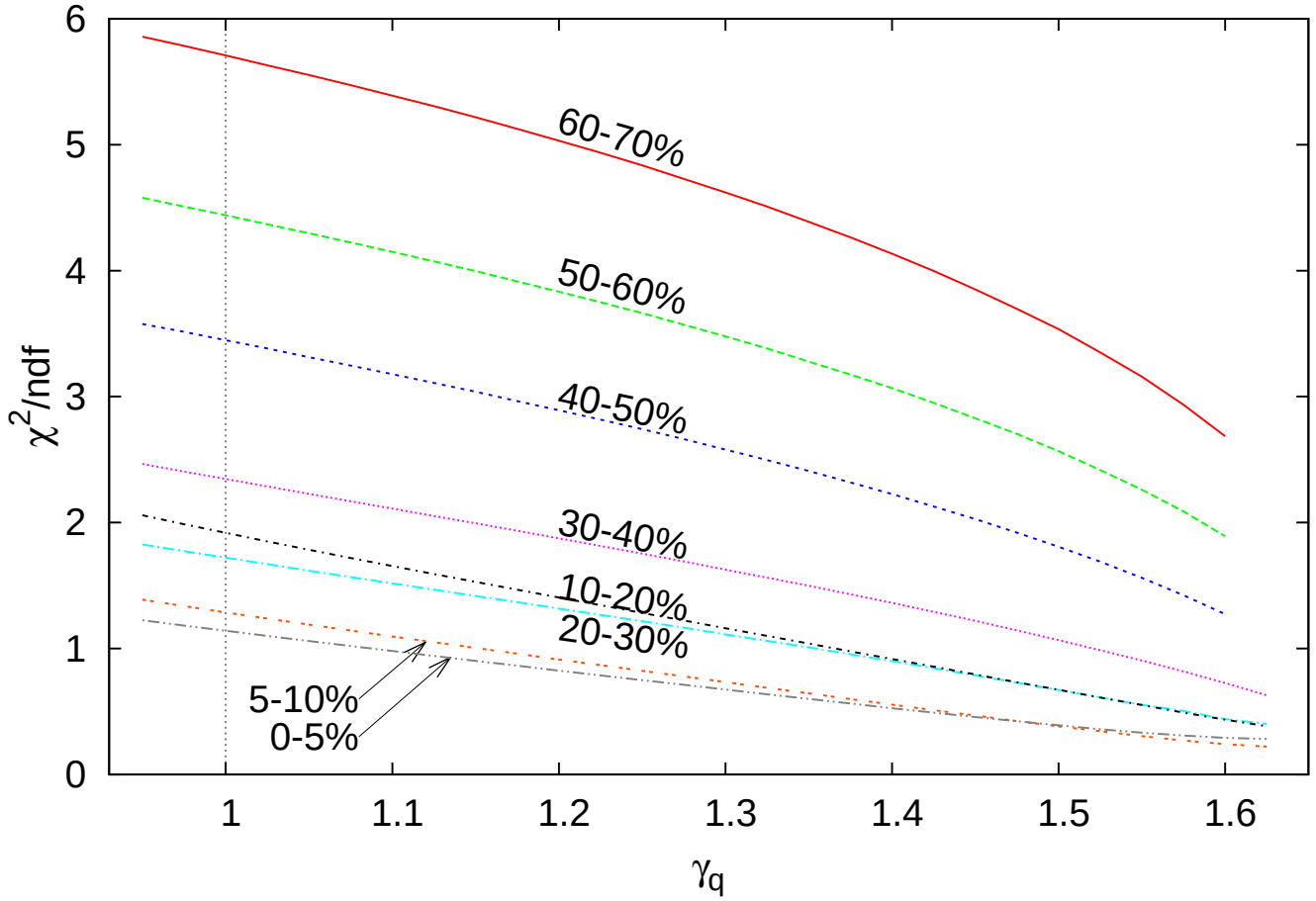


Figure: χ^2/ndf profile as a function of γ_q for all studied centralities.

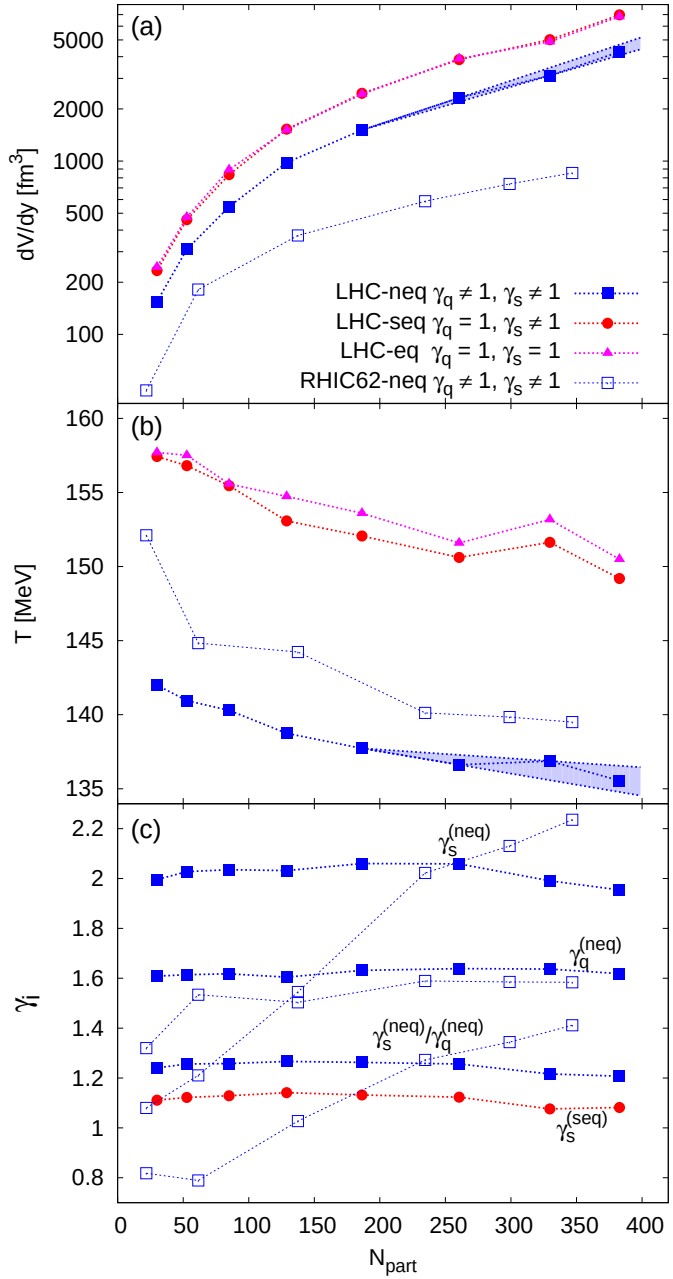
THERMAL PARAMETERS

a

b

c

d



PHYSICAL PROPERTIES

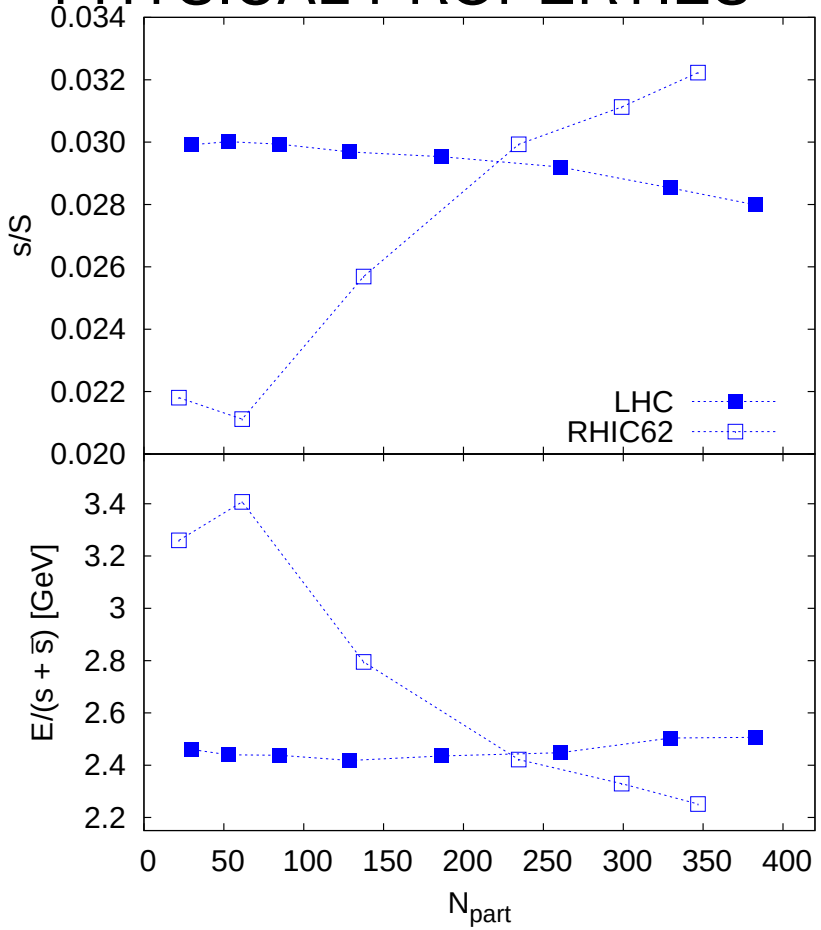


Figure: Strangeness per entropy s/S at LHC2760 and at RHIC62 as a function of $N_{\rm part}$; Thermal energy cost to make a strange or antistrange quark.

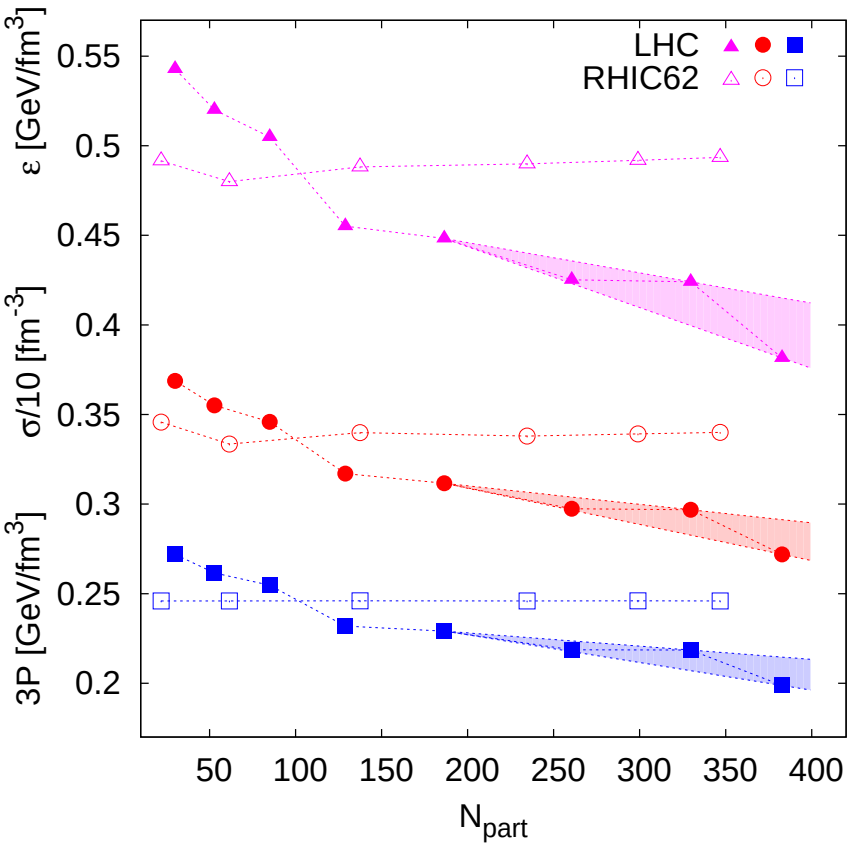


Figure: Energy density ε, entropy density σ and the hadronization pressure $3P$. LHC2760 values – full symbols, RHIC62 – open symbols.

ENTROPY

a

b

c

d

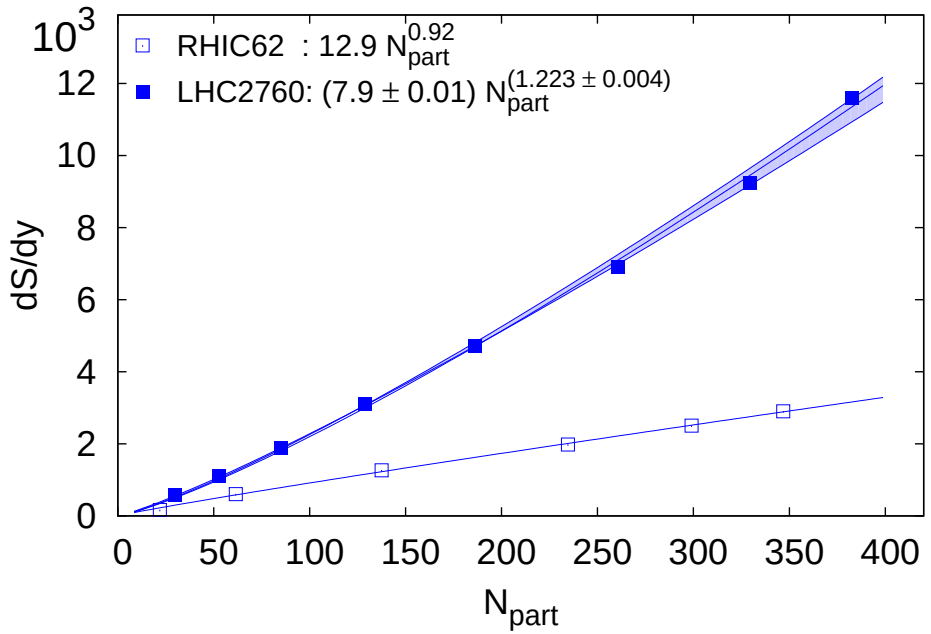


Figure: Entropy yield dS/dy at LHC2760 and at RHIC62 as a function of centrality participant number N_{part}, showing power law fit parameters in the insert.

CONCLUSIONS

- SHM Works
- QGP at LHC defined
- Next: Charm