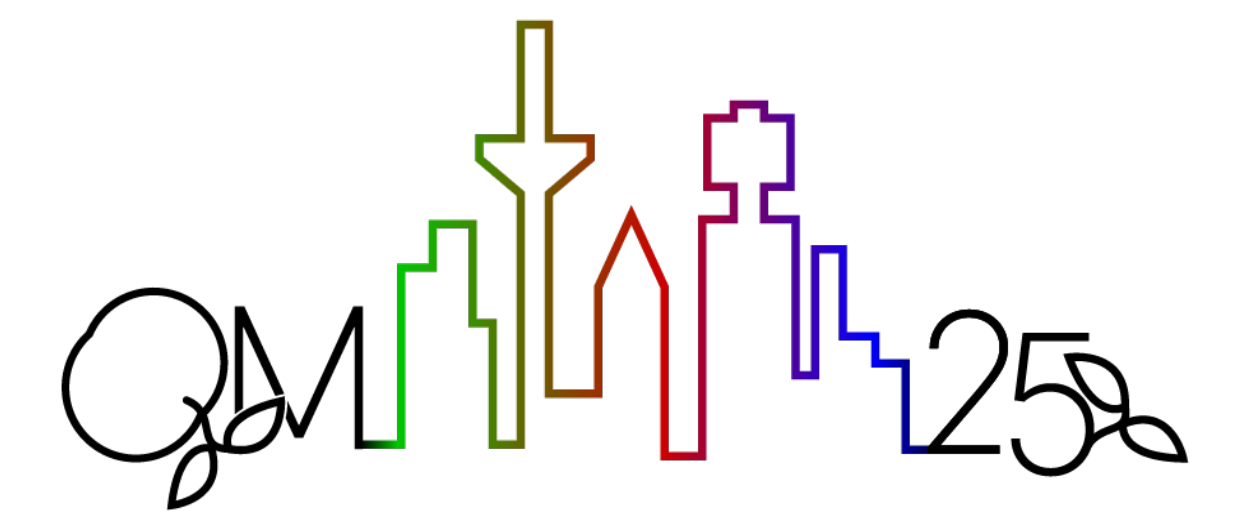
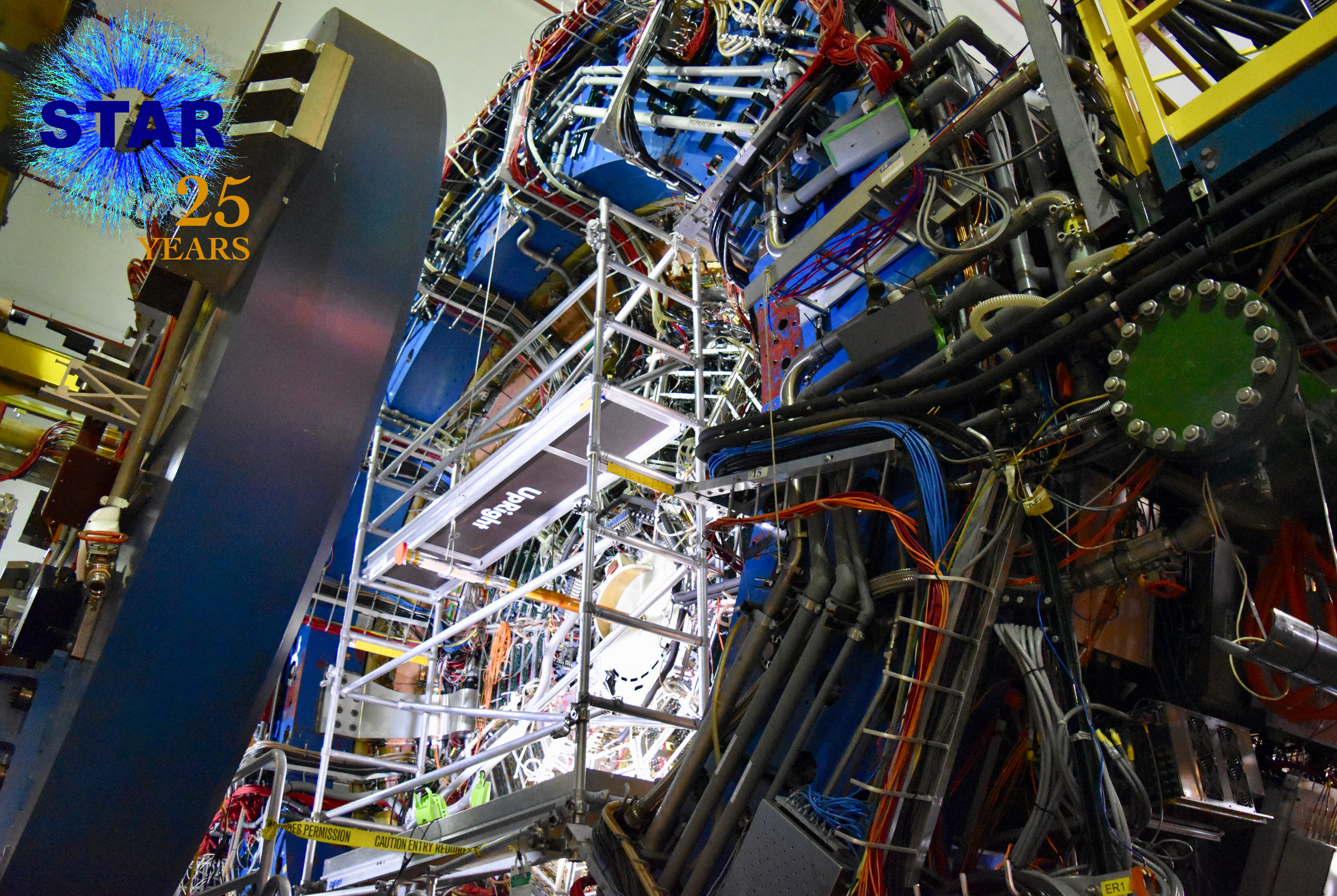




Experiment Overview: STAR

Sooraj Radhakrishnan
(Kent State University)
for the
STAR Collaboration

*Quark Matter 2025,
Frankfurt, Germany*

Supported in part by



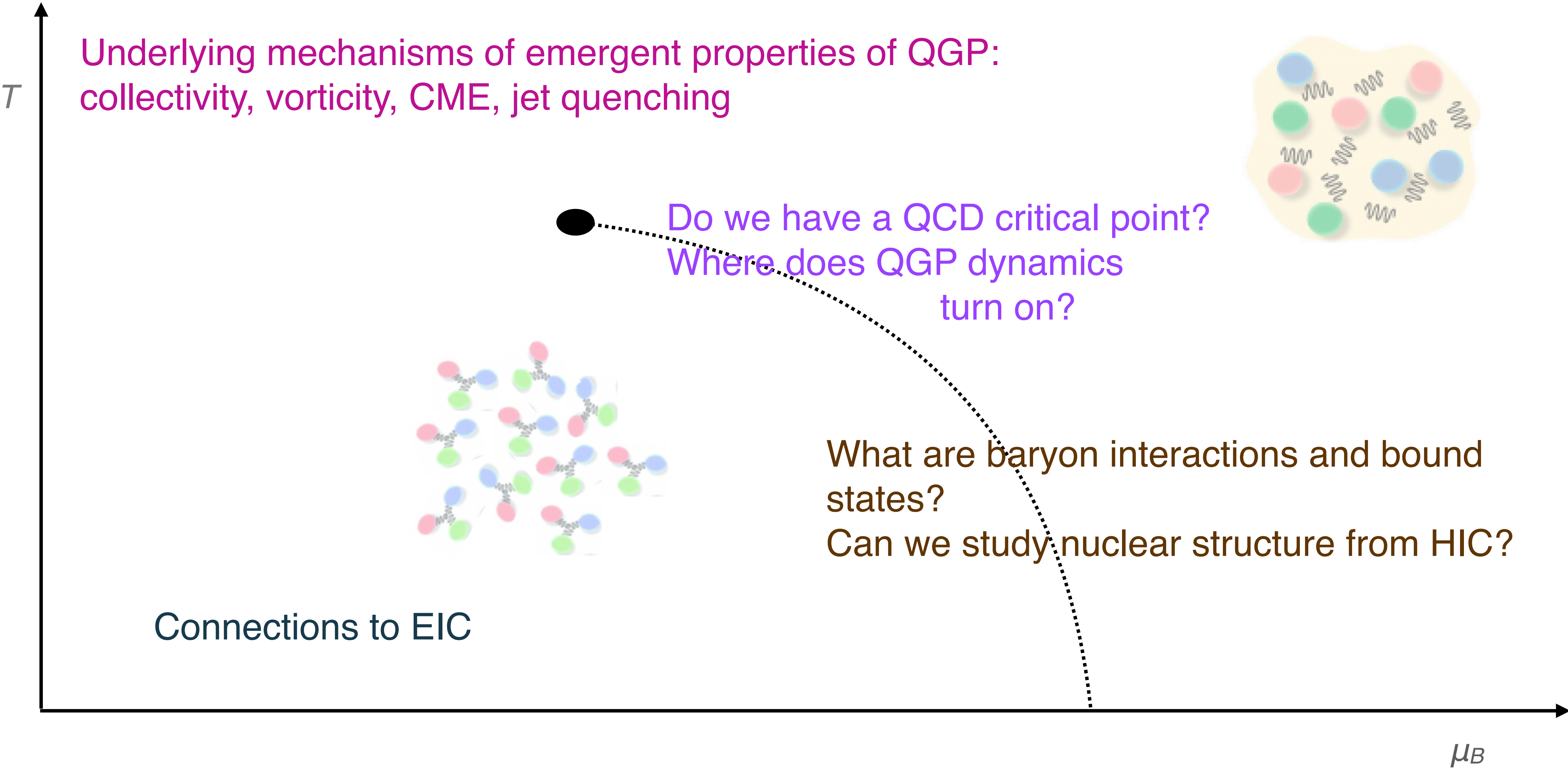
U.S. DEPARTMENT OF
ENERGY

Office of
Science

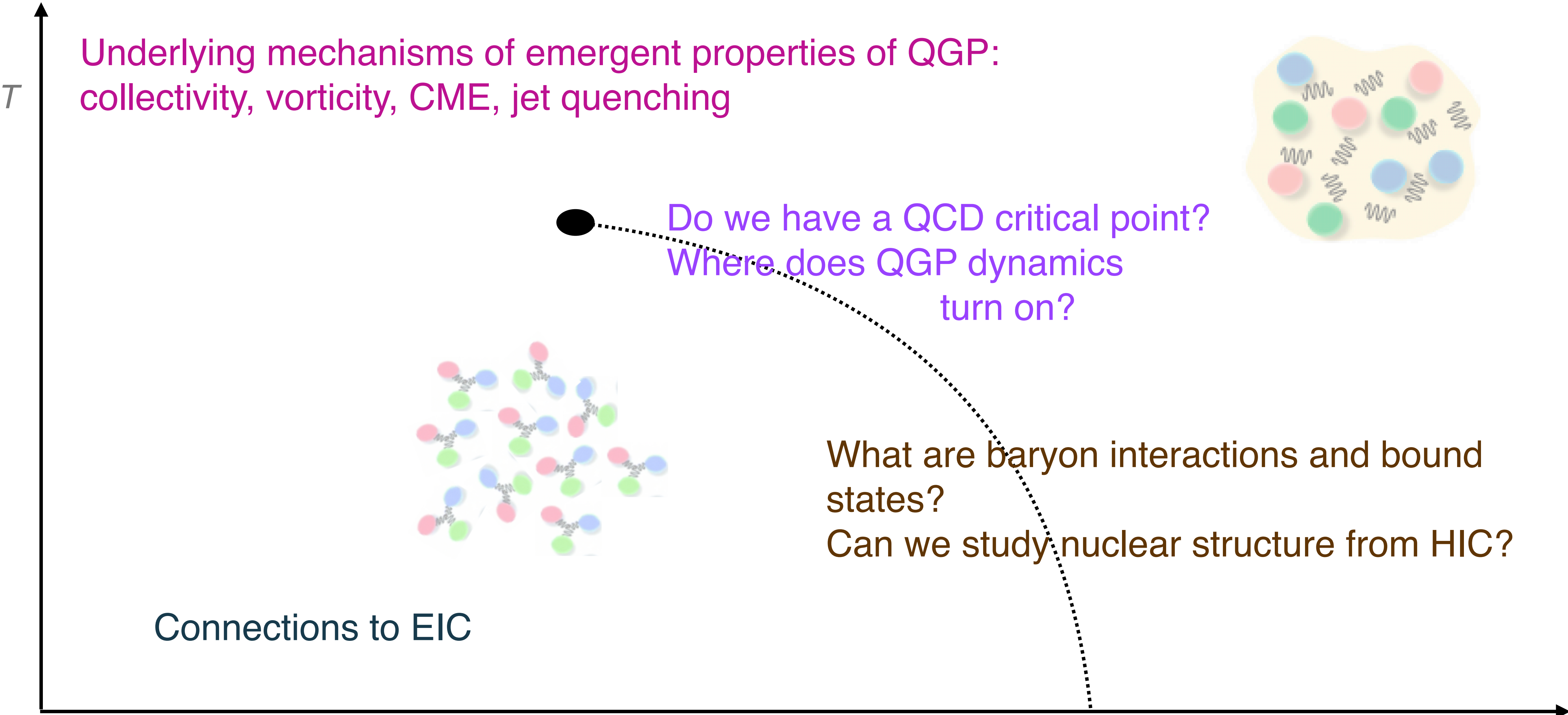

KENT STATE
UNIVERSITY



STAR and high energy nuclear physics



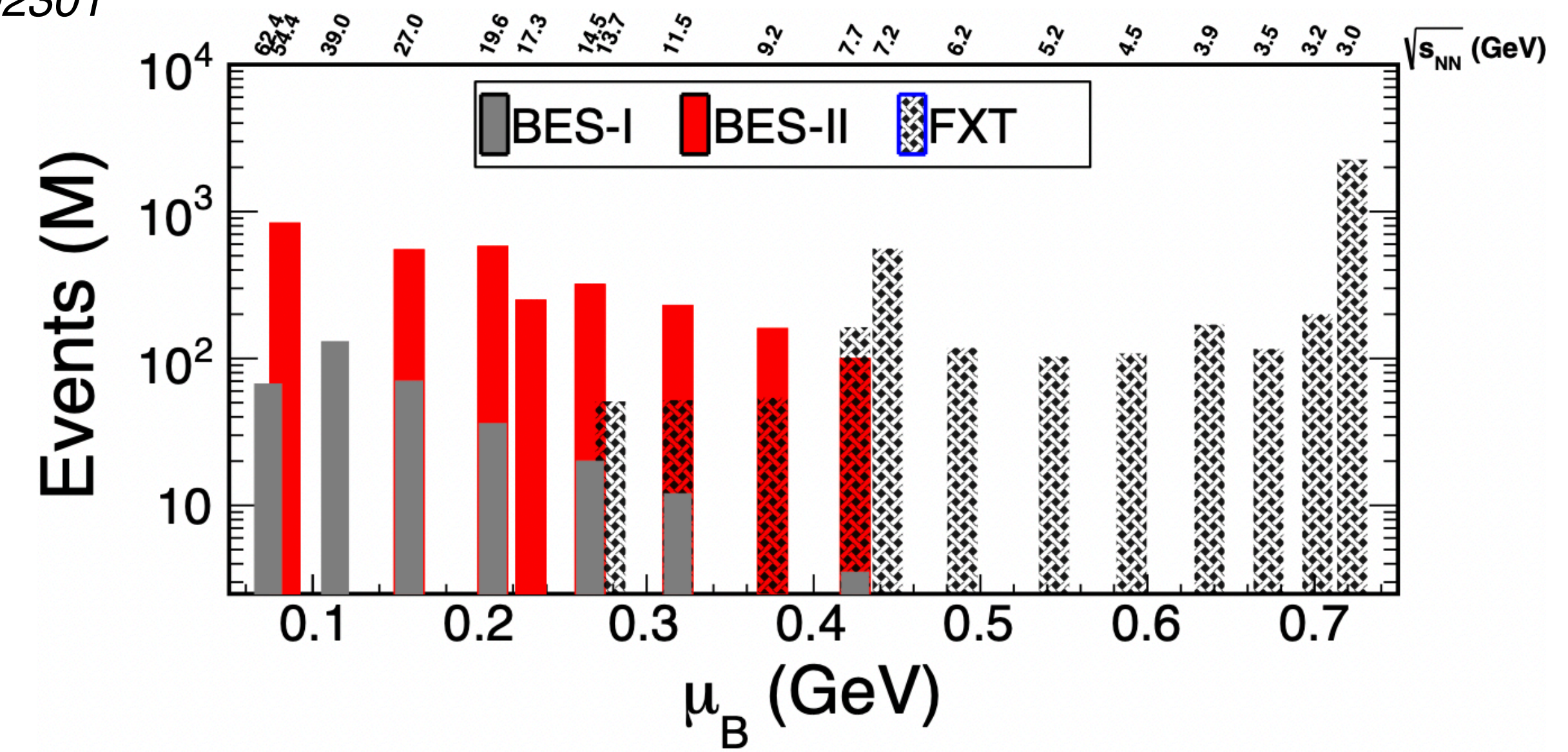
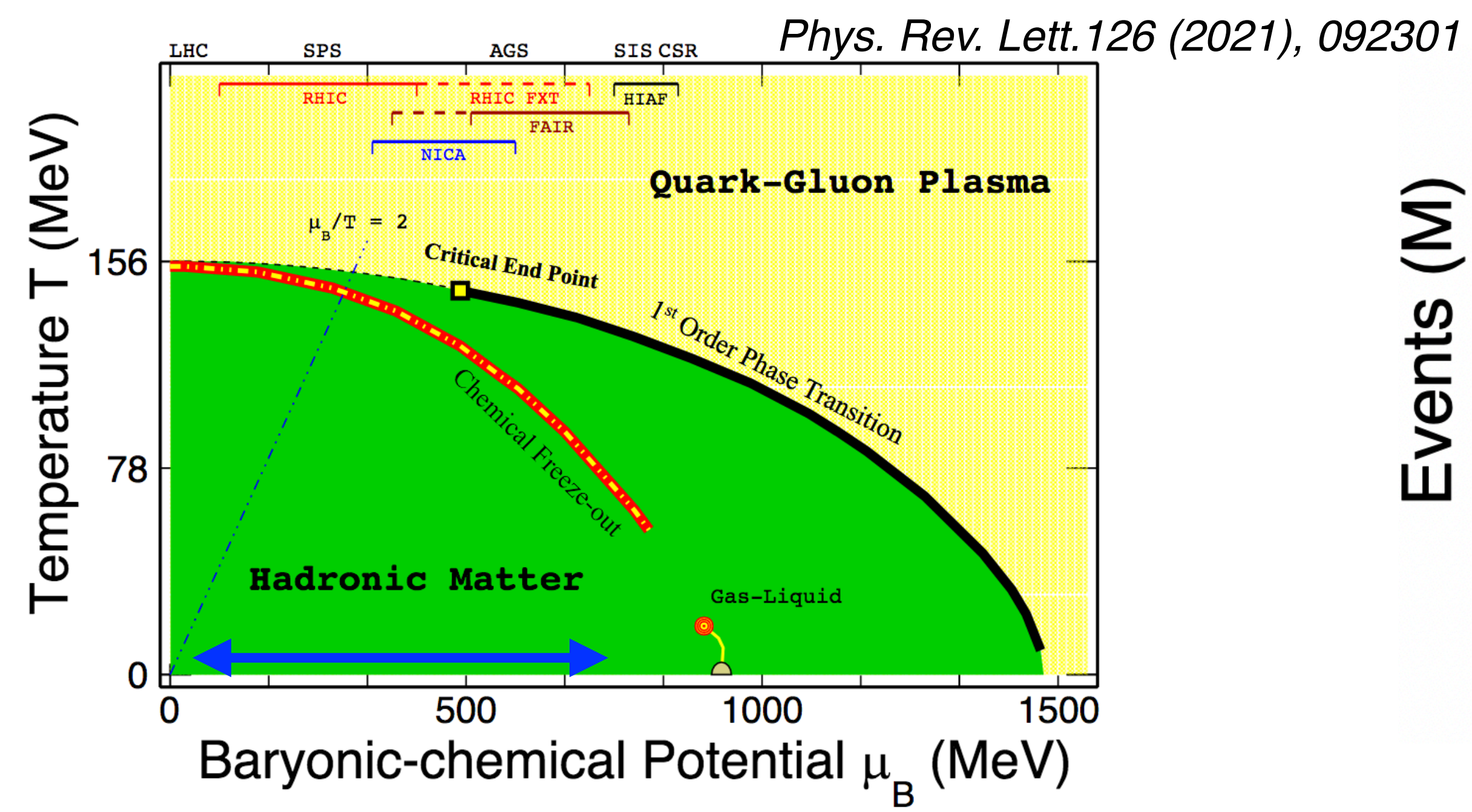
STAR and high energy nuclear physics



STAR uniquely poised to answer
questions on all these aspects

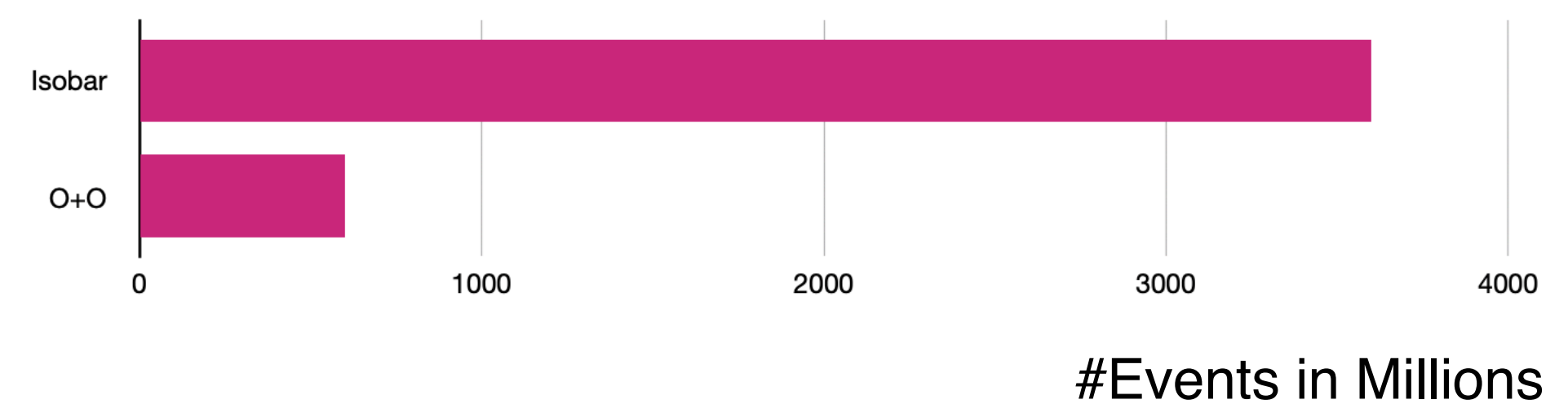


Beam Energy Scan, varied collision systems



High statistics BES-II dataset covering $100 < \mu_B < 760$ MeV

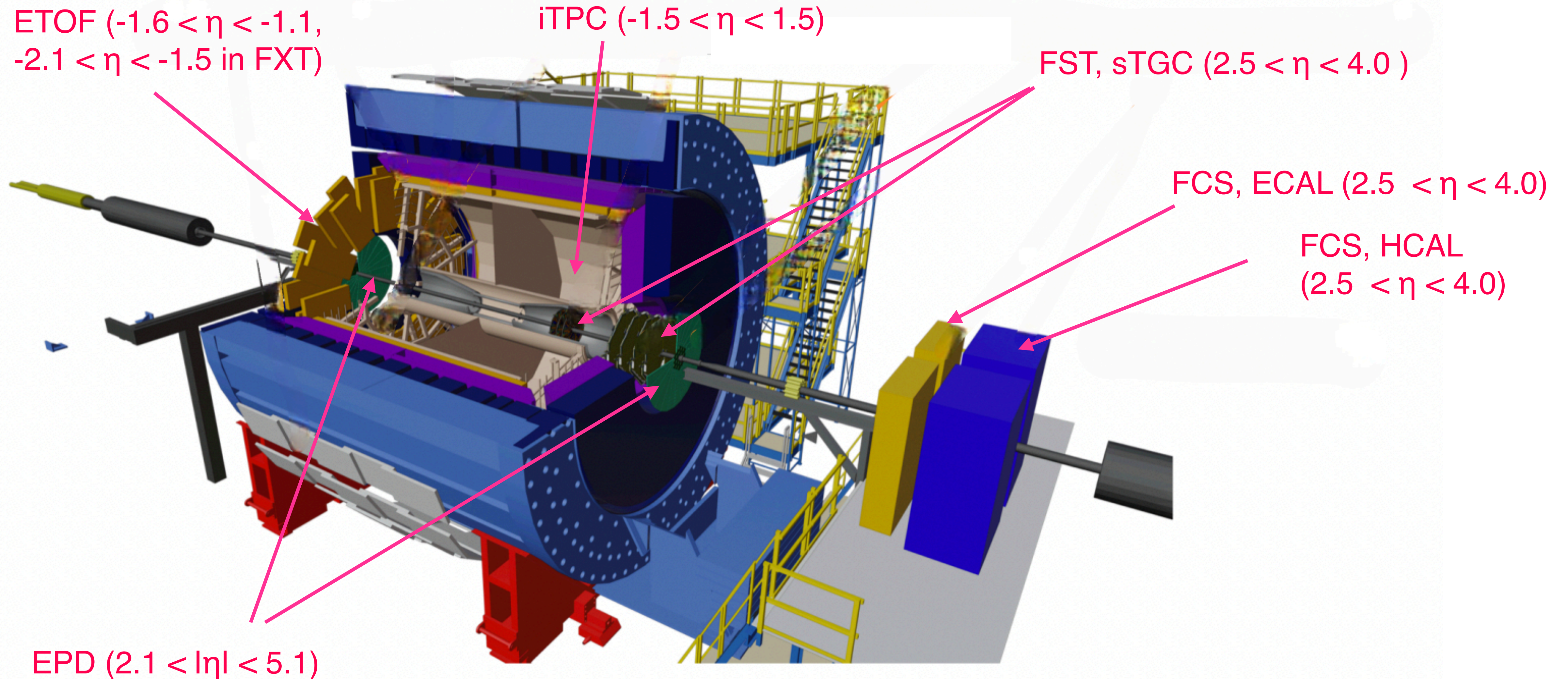
Recent high statistics isobar (Ru+Ru, Zr+Zr) and O+O datasets



Also varied collision systems at top RHIC energies:
U+U, Au+Au, Ru+Ru/Zr+Zr, Cu+Au, Cu+Cu,
O+O, d+Au, He3+Au, p+ Au, p+Al,
(polarized) p+p

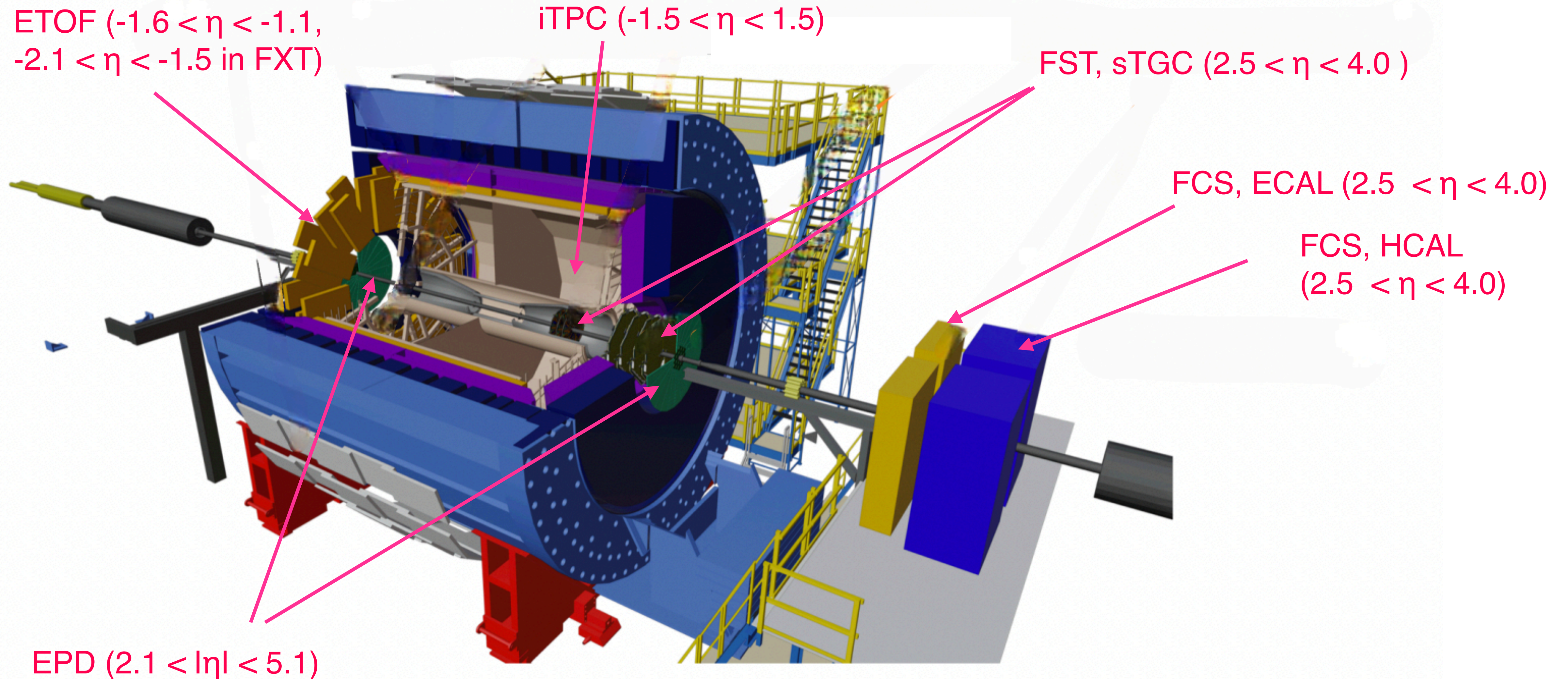


STAR with BES-II and FWD upgrades

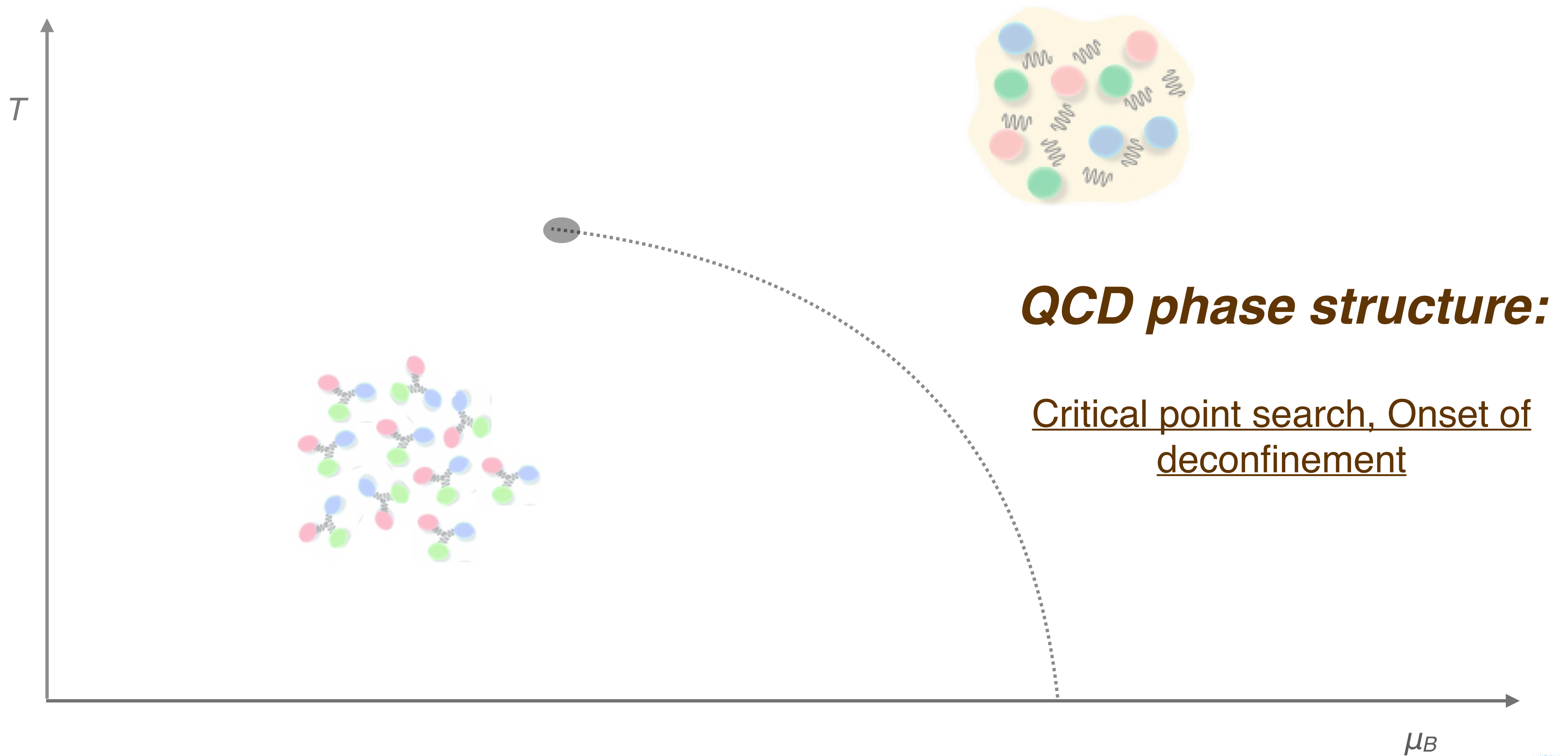


Targeted upgrades (23 in total over the years!) to make most of the RHIC program

STAR with BES-II and FWD upgrades



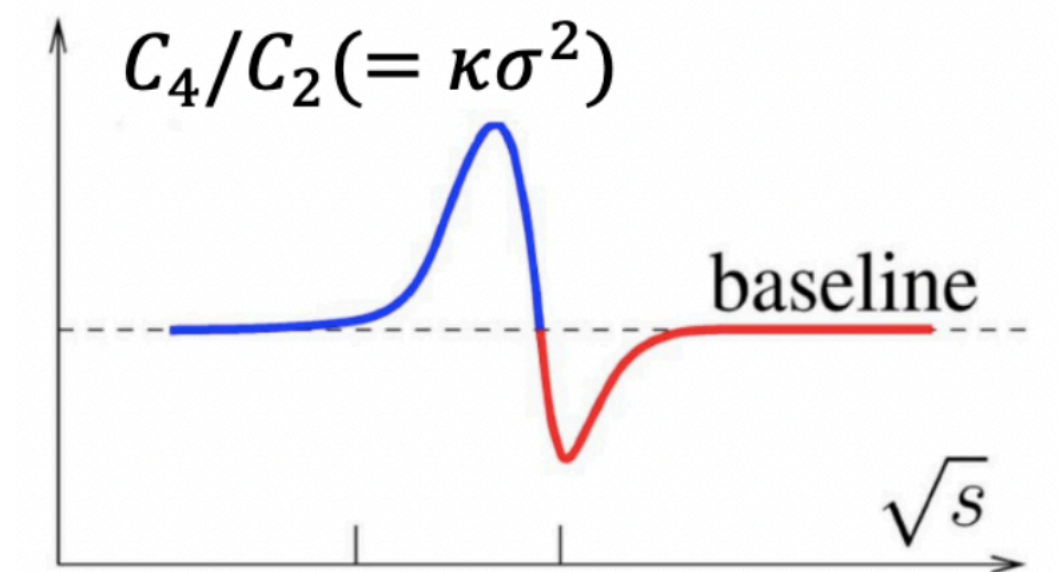
21 talks and 55 posters at this Quark Matter from STAR!



Net-proton higher order cumulants

- Cumulants of conserved charge distributions relate to correlation length in the medium
- Higher order cumulant ratios of net-baryons predicted to be sensitive to existence of critical point

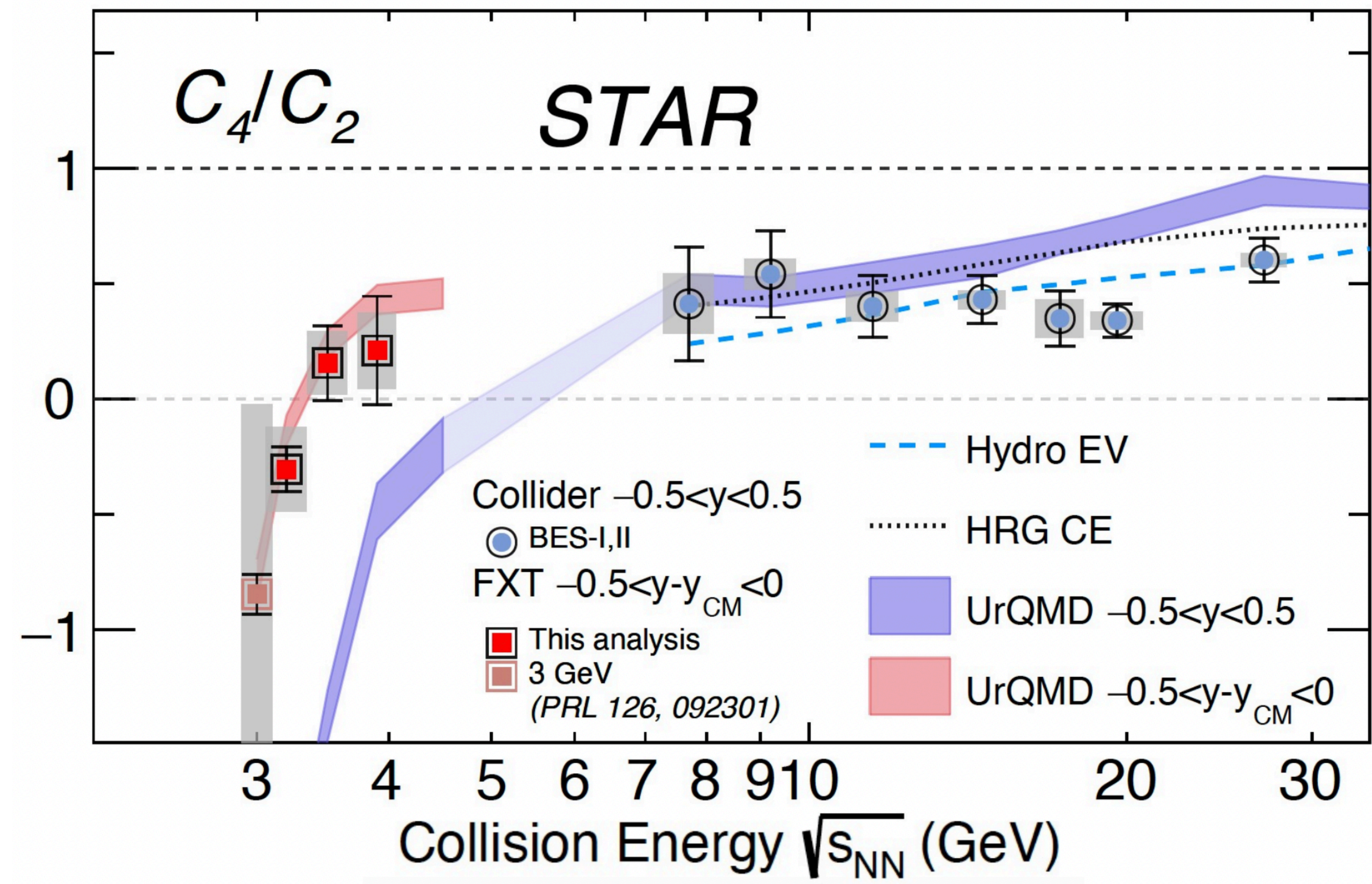
$$C_2 \sim \xi^2, C_4 \sim \xi^7$$



Net-proton higher order cumulants

- Precision measurements from STAR BES-II
- Final results for collider energies $\sqrt{s_{NN}} = 7.7$ to 19.6 GeV and FXT energies $\sqrt{s_{NN}} = 3.2, 3.5$ and 3.9 GeV

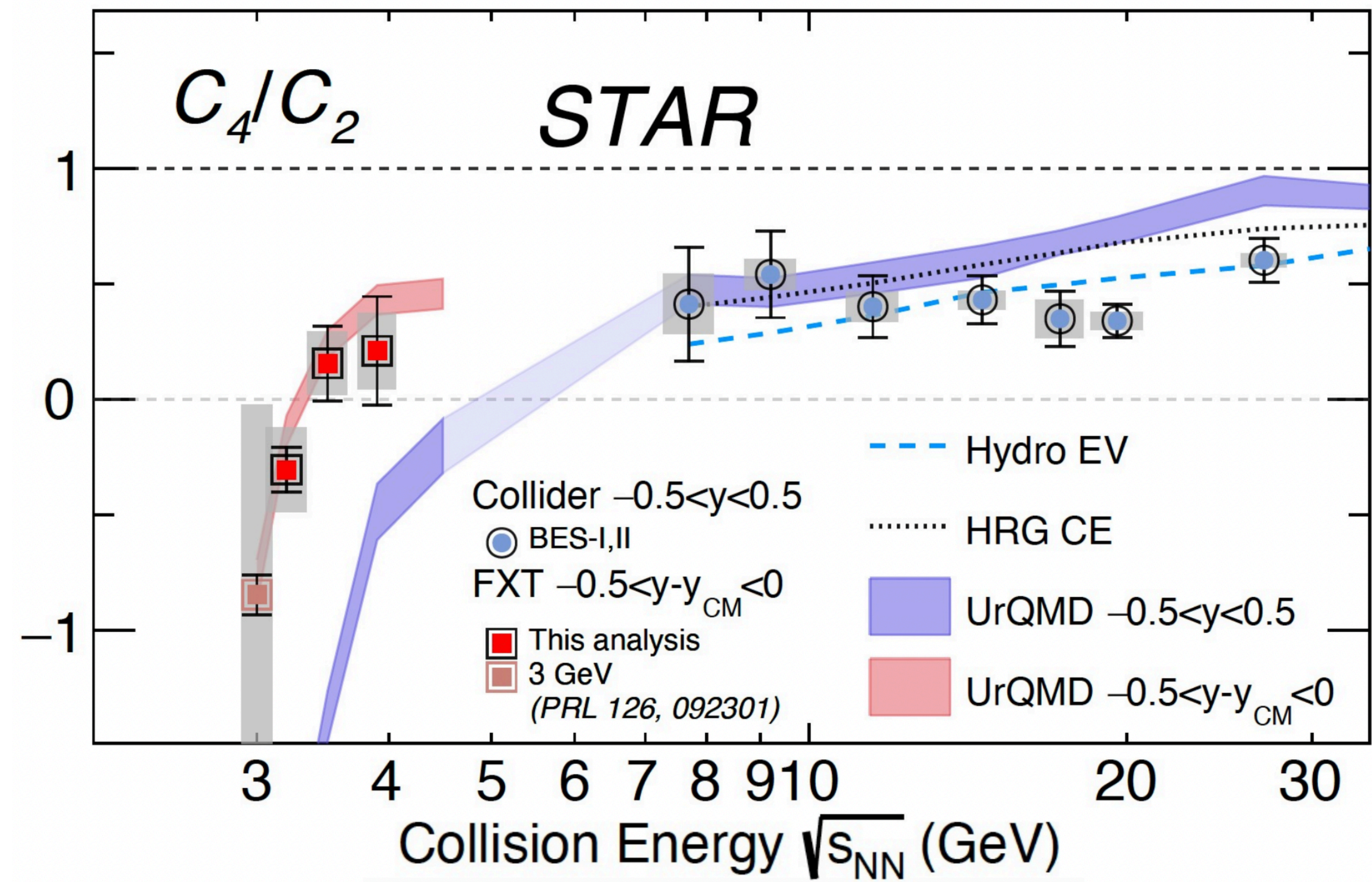
0-5% Au+Au Collisions at RHIC



Net-proton higher order cumulants

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0-5% Au+Au Collisions at RHIC



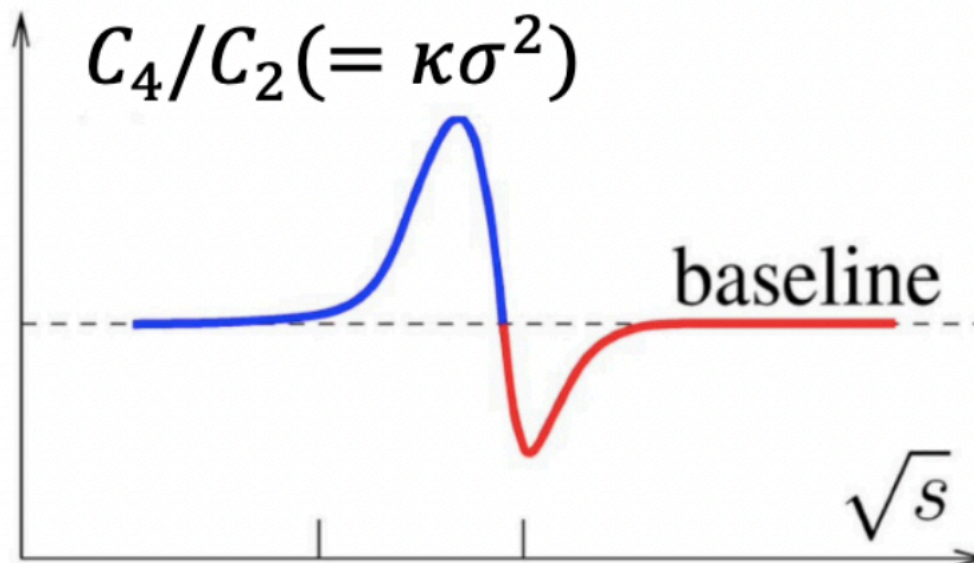
- In 3.2 - 3.9 GeV, C_4/C_2 is consistent with values from UrQMD
- Deviations seen at higher energies
- Analysis of 4.5 GeV and 2 billion events from Run21 3 GeV are ongoing



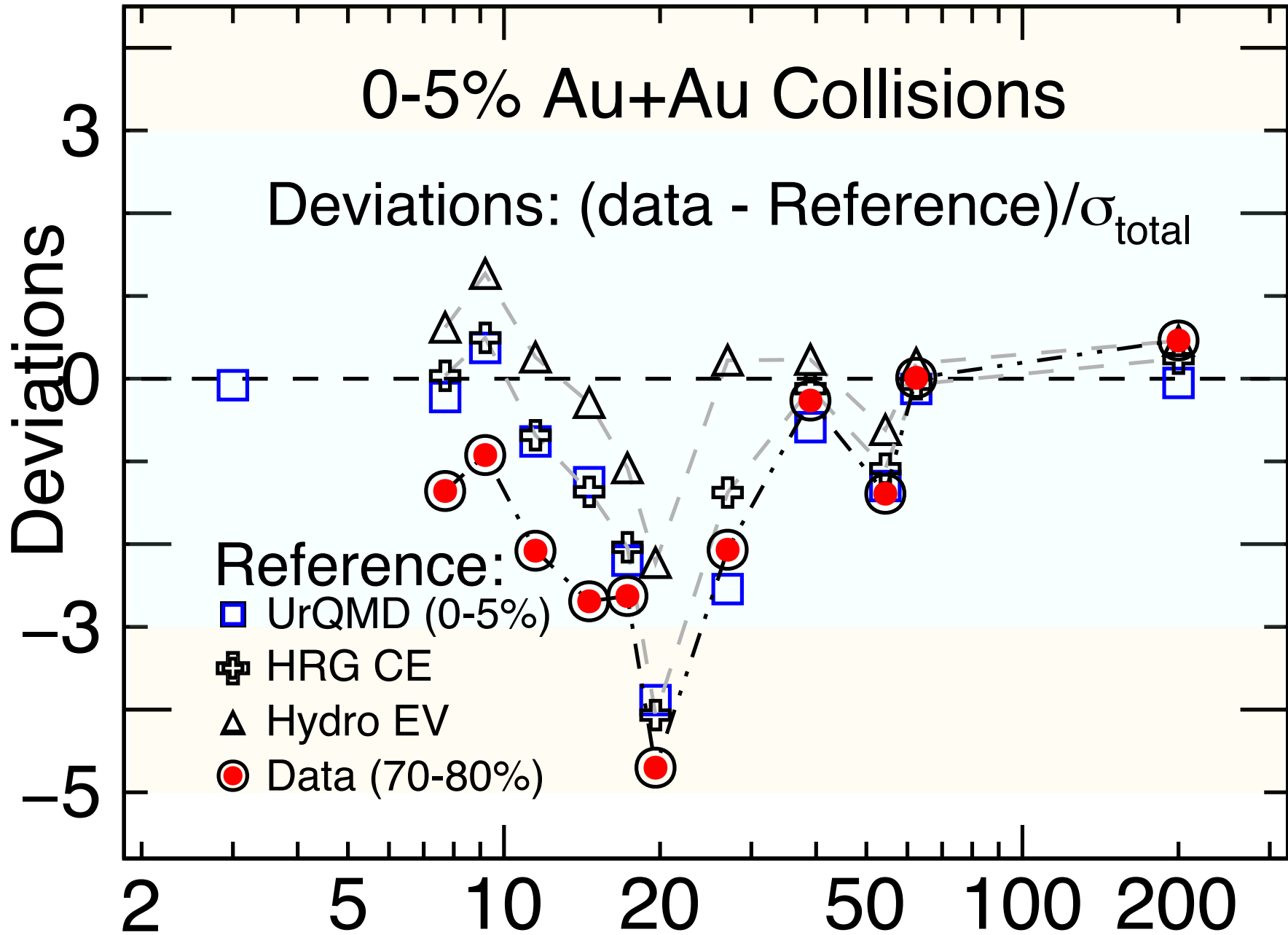
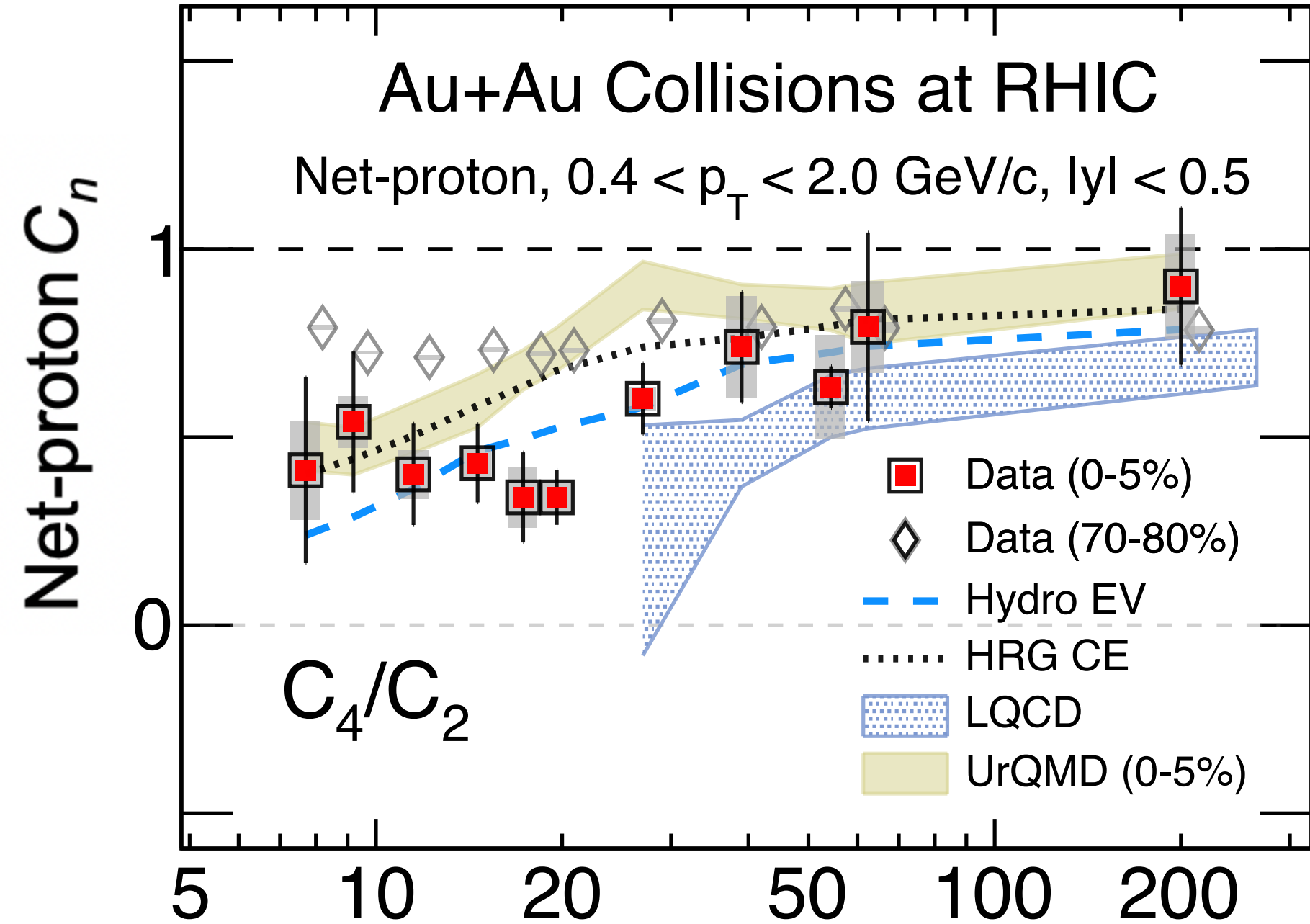
Net-proton higher order cumulants

- Cumulants of conserved charge distributions relate to correlation length in the medium
- Precision data from BES-II
 - Factor of 4.5 reduction for σ_{stat} and 3 — 4 for σ_{sys}

$C_2 \sim \xi^2, C_4 \sim \xi^7$



STAR: [arXiv:2504.00817](https://arxiv.org/abs/2504.00817)

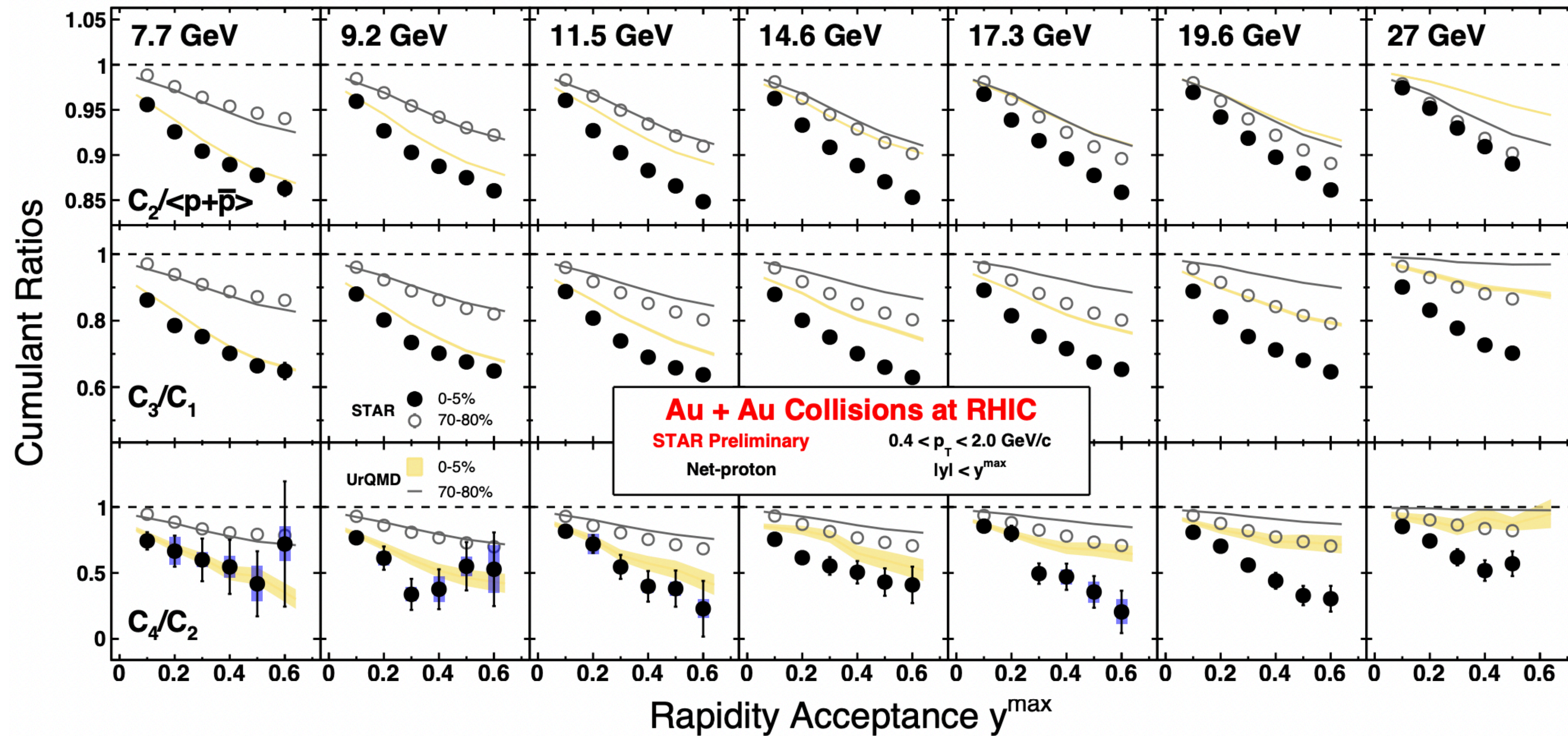


2 - 5 σ deviation
from calculations
without CP,
peripheral data



Rapidity scan of higher order cumulants

- Widening y , p_T windows of measurement enhances potential critical contributions



- Deviation from UrQMD increases with y acceptance and near 20 GeV

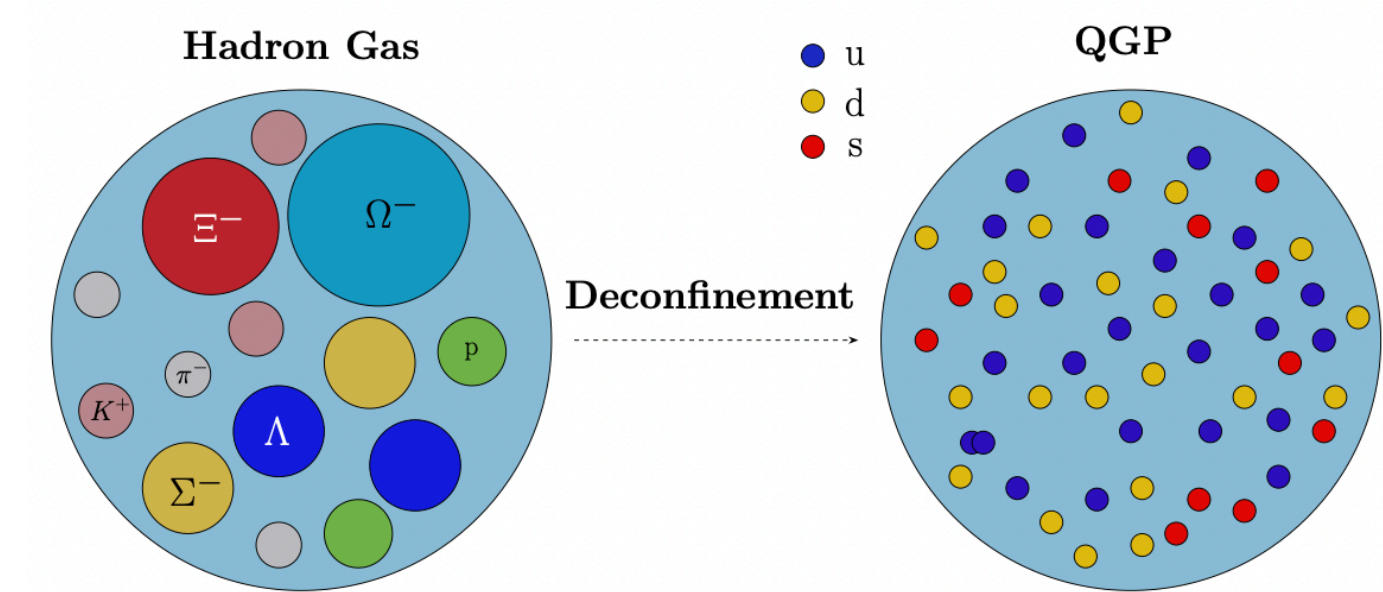
Poster by Yongcong Xu, #821

Poster by Xin Zhang #902

Talk by Yige Huang, Wed, P30



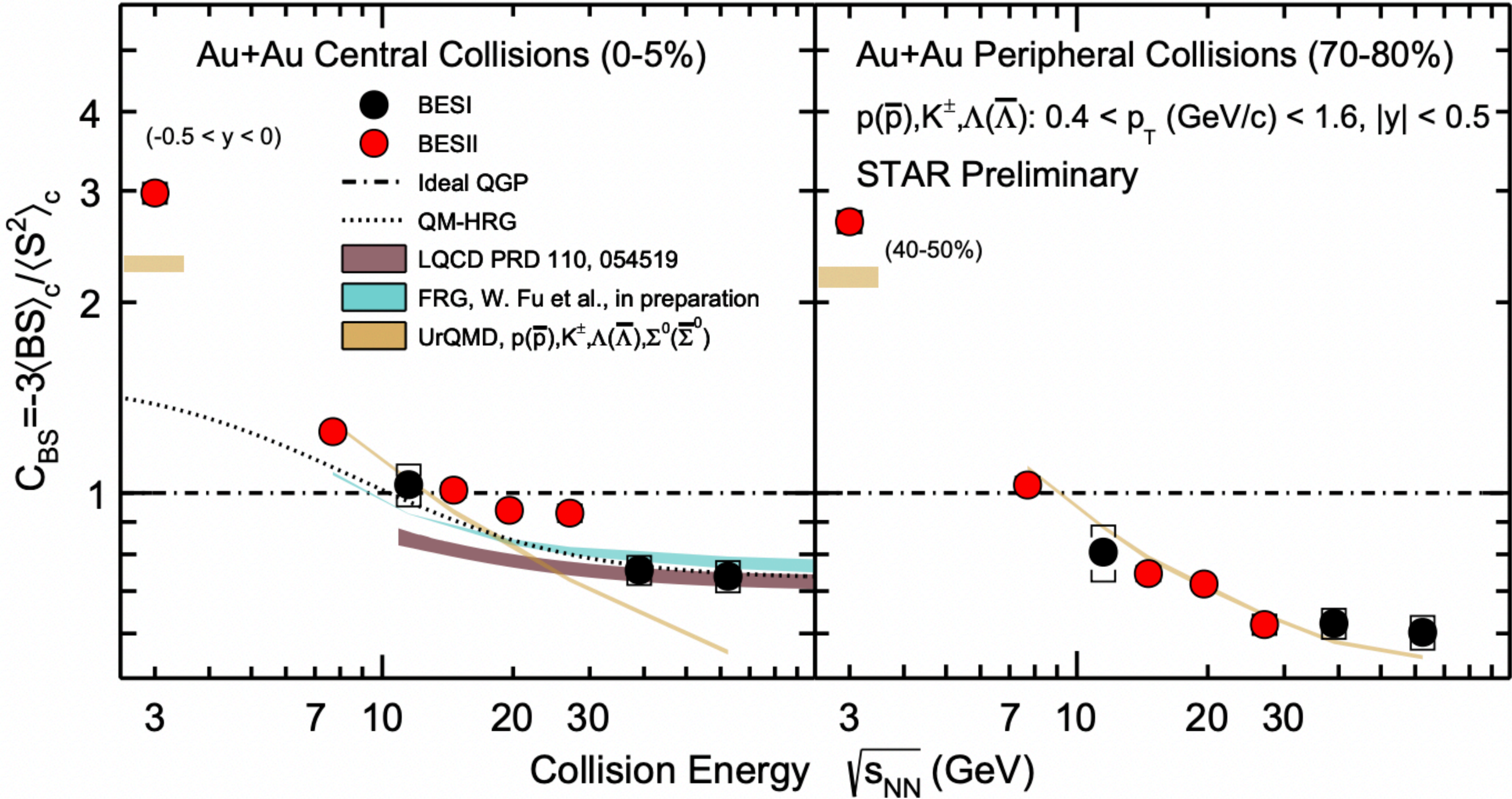
Baryon - Strangeness correlations



$$C_{BS} = -3 \frac{\langle BS \rangle_c}{\langle S^2 \rangle_c} = -3 \frac{\langle BS \rangle - \langle B \rangle \langle S \rangle}{\langle S^2 \rangle - \langle S \rangle^2}$$

Proposed as a sensitive probe of deconfinement

- C_{BS} in central collisions agree with FRG and LQCD at higher energies, with UrQMD at lower energies, deviate from both in-between
- Agree with UrQMD at all energies in peripheral

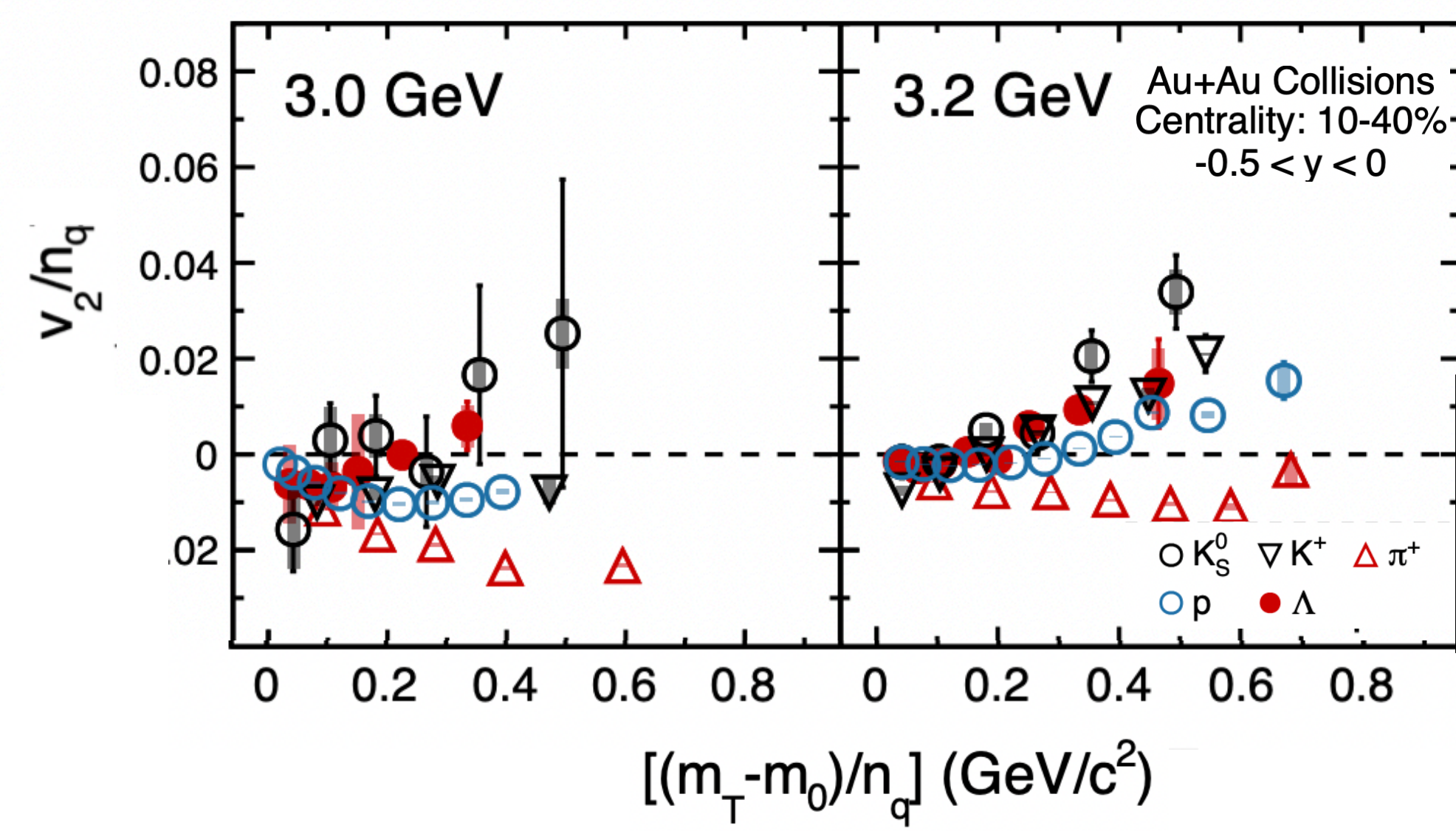
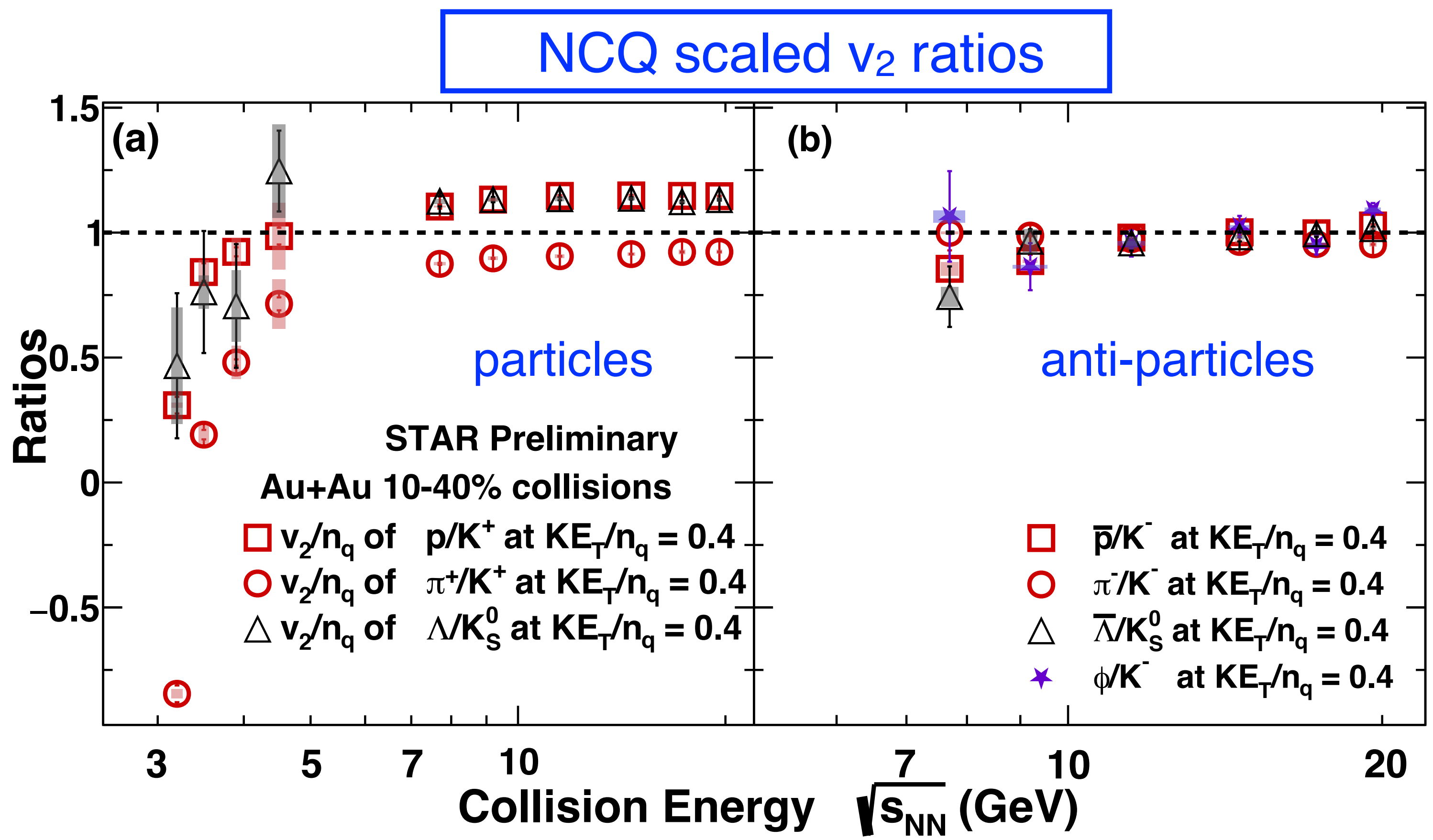


Poster by Yu Zhang, #1020

Talk by Hanwen Feng, Wed, P35



NCQ scaling of elliptic flow



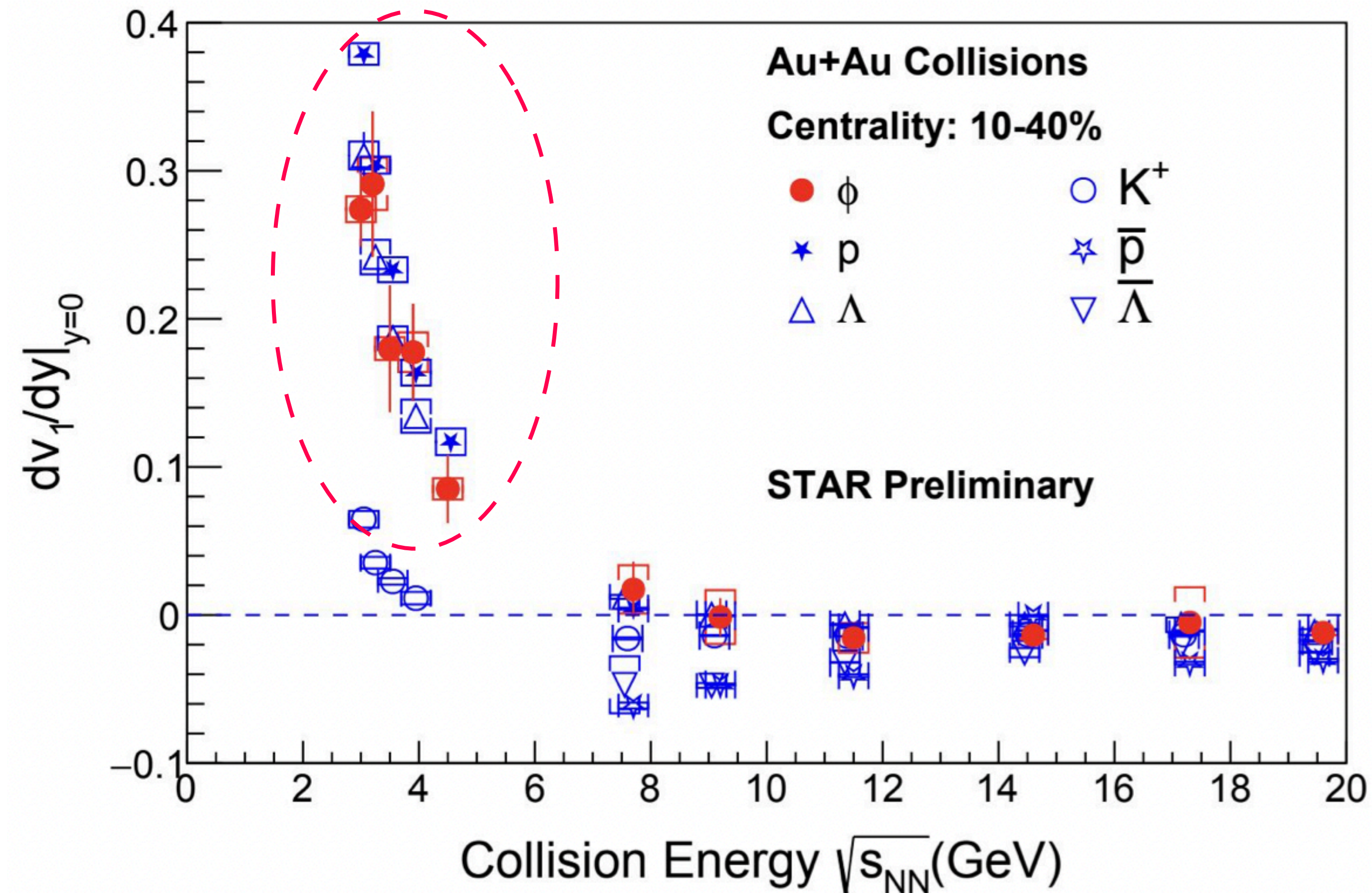
- Various identified hadron measurements to constrain shadowing and turn-on of partonic collectivity

- Partonic collectivity at 7.7 GeV and above
- NCQ scaling for v_2 breaks completely at 3.2 GeV and below, indicates dominance of hadronic interactions



Directed flow of identified hadrons

- Directed flow sensitive probe of early time interactions and EoS

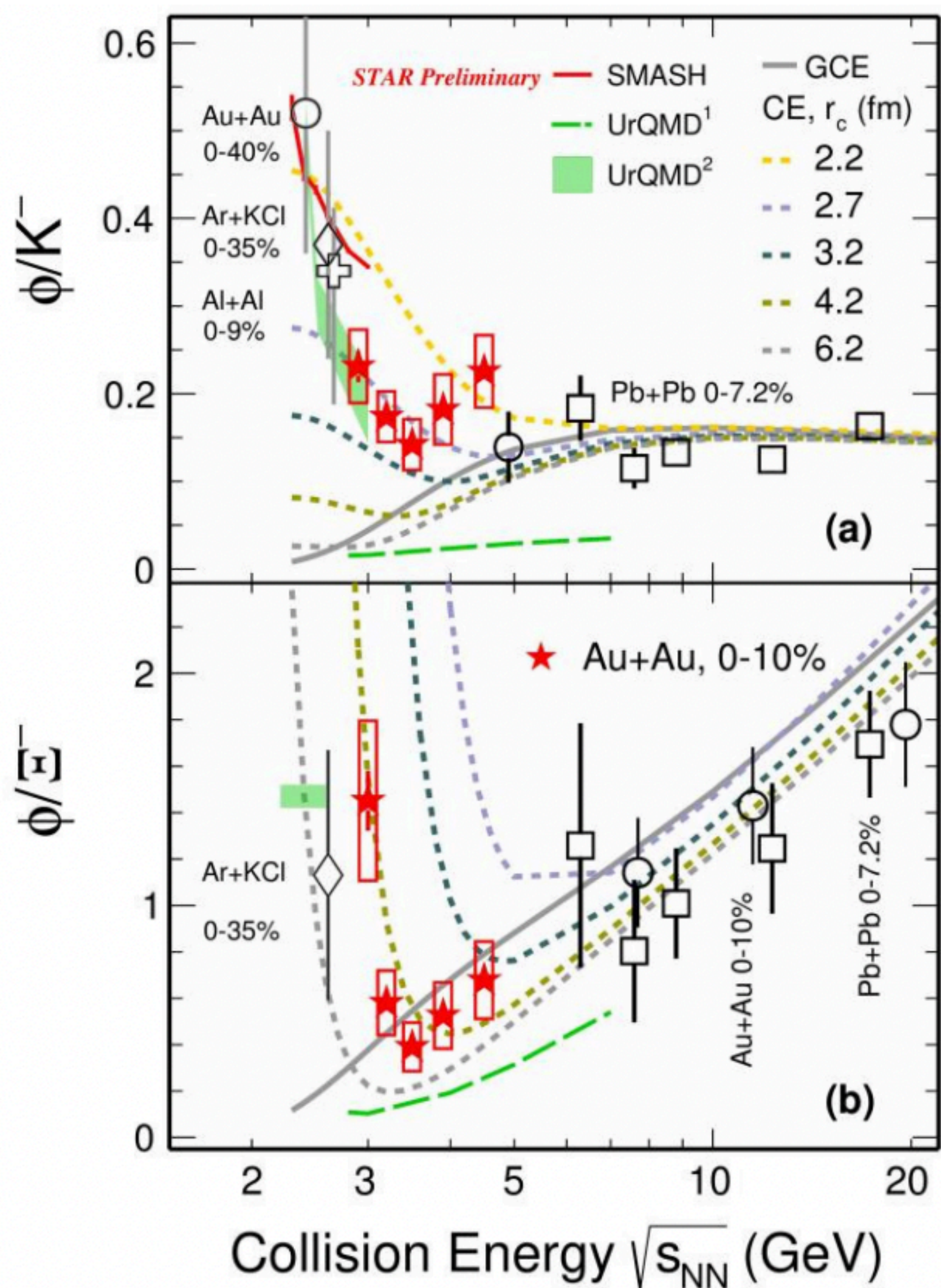


- Precision measurement of v_1 of various identified particles across the collision energies
- Kaons show sign change as protons, but with minimum between 4.5 and 7.7 GeV
- Unexpectedly large v_1 for ϕ mesons in the high μ_B region, similar v_1 as protons and Λ !

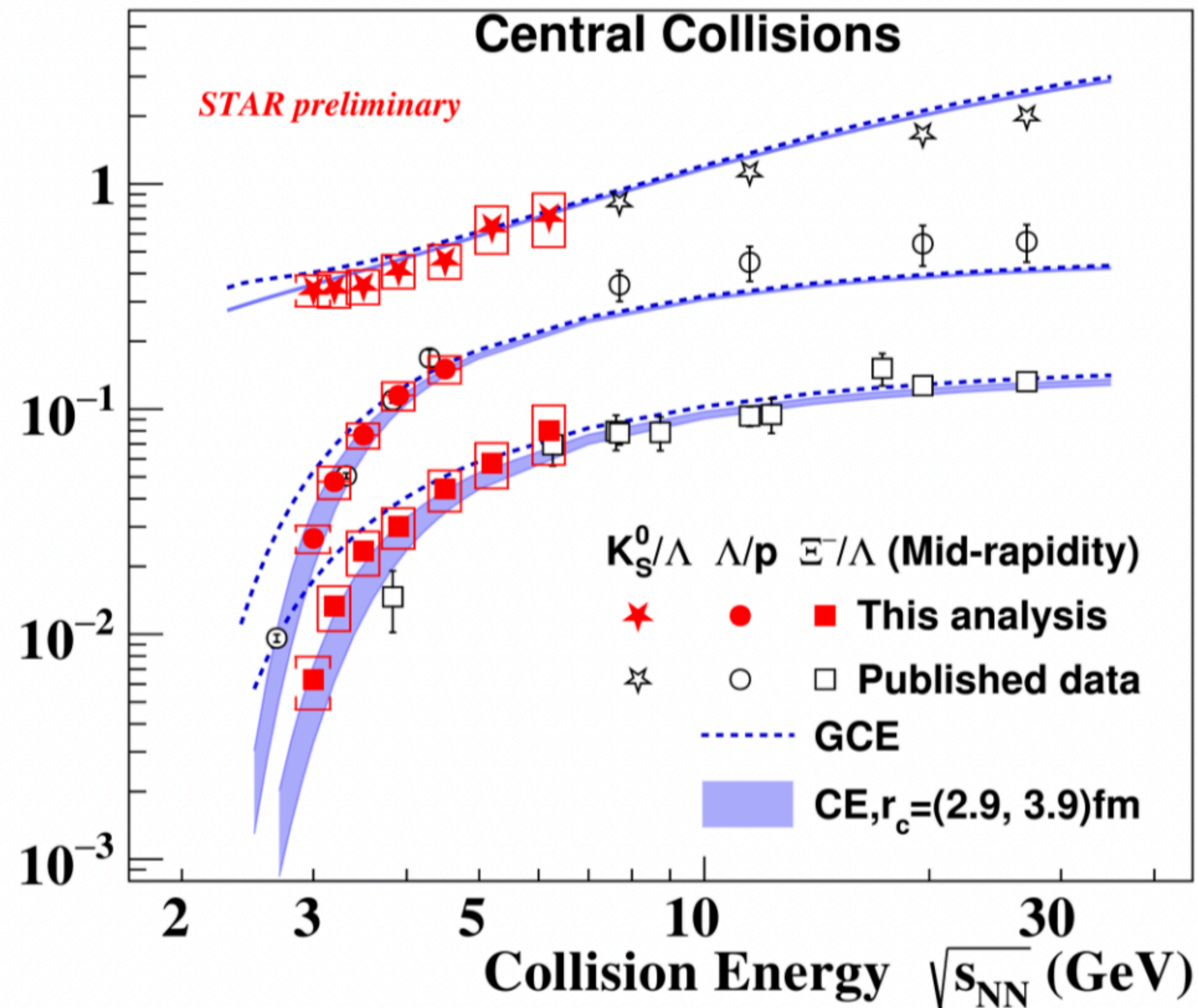
Poster by Guangyu Zheng, #696

Talk by Sharangrav Sharma, Wed, P31

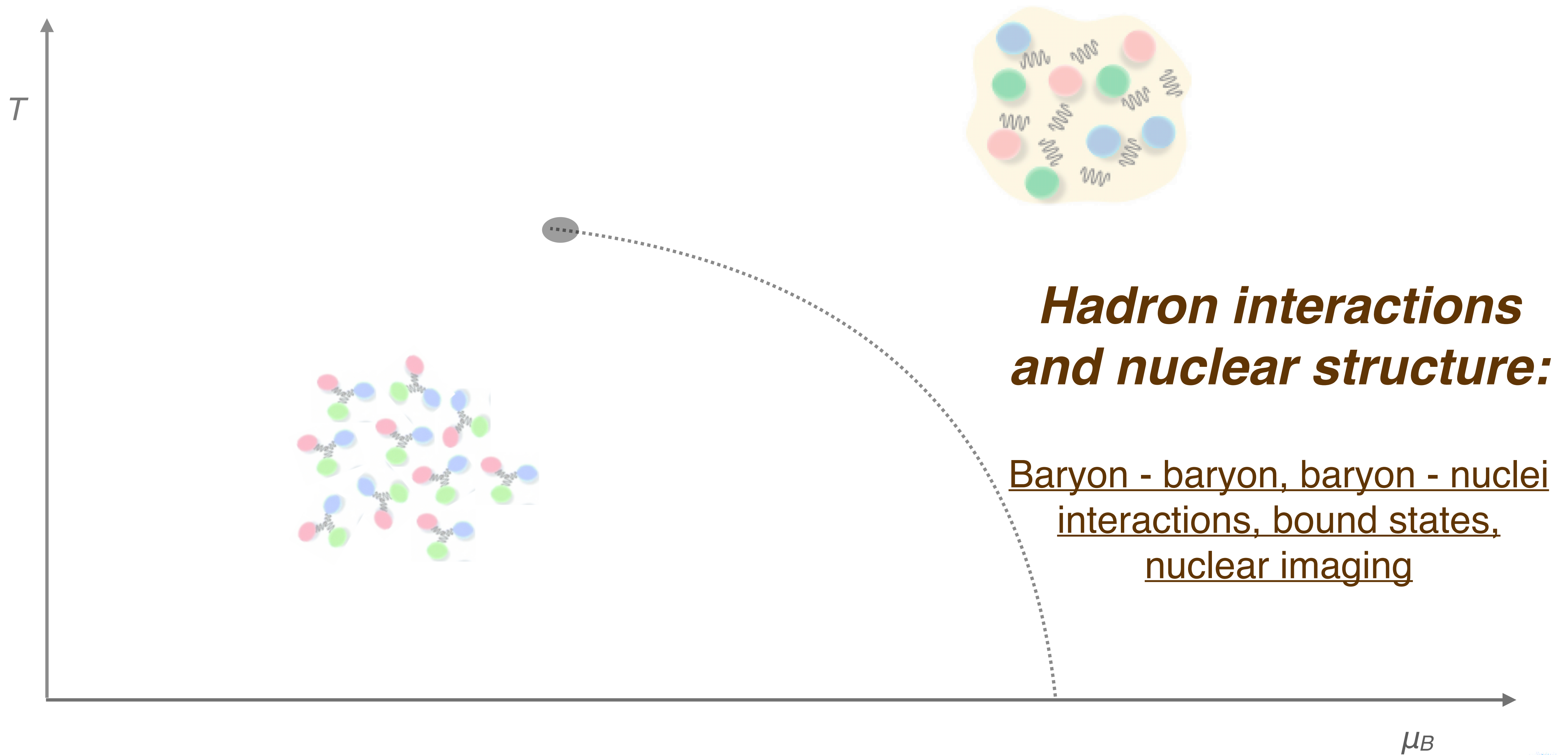
Strange hadron production



Yields Ratios



- Strange hadron yield ratios deviate from GCE for collision energies below ~ 5 GeV
 - Less strangeness production, CE important



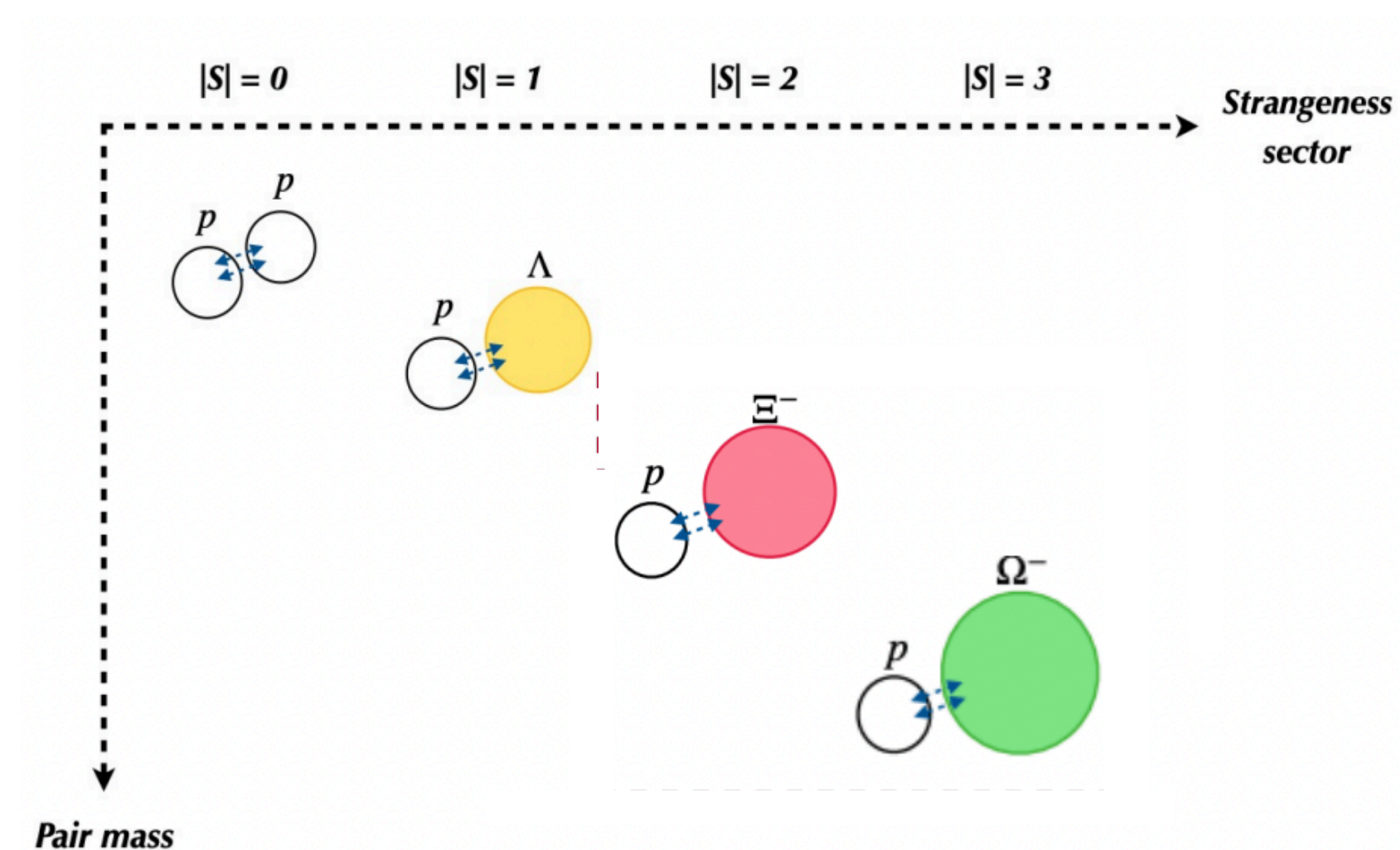
p-Ω correlations

$$C(k^*) = \int S(\vec{r}) |\Psi(\vec{k}^*, \vec{r})|^2 d^3\vec{r} = \frac{N_{\text{same}}(k^*)}{N_{\text{mixed}}(k^*)}$$

$S(\vec{r})$: Source function
 $\Psi(\vec{k}^*, \vec{r})$: Pair wave function
 $k^* = \frac{1}{2} |\vec{p}_a - \vec{p}_b|$, relative momentum
 $\vec{r}$: relative distance

- Use correlation femtoscopy to study YN interactions

- Do we have strange di-baryon bound states?
- Use high-statistics isobar data to explore

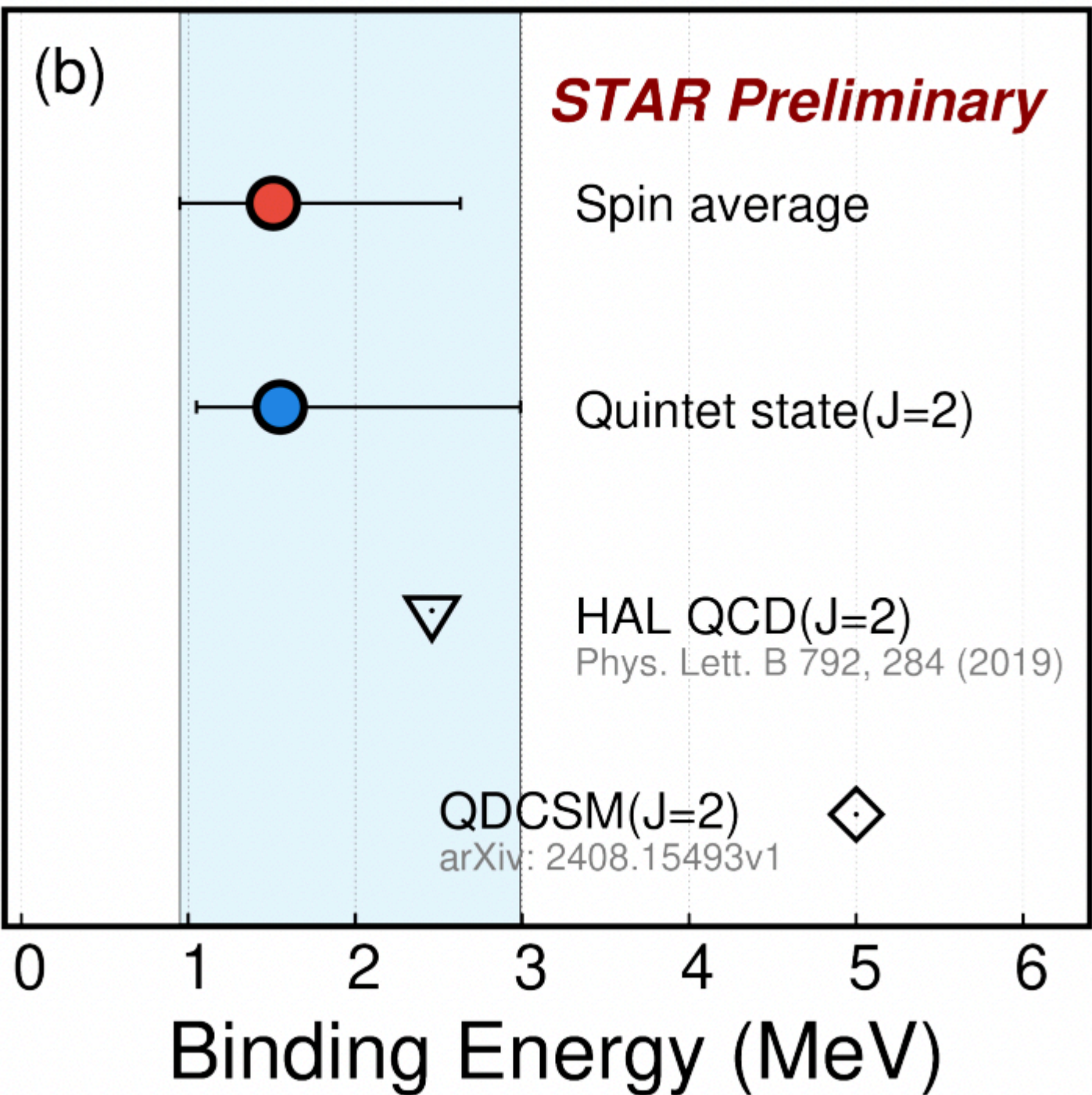
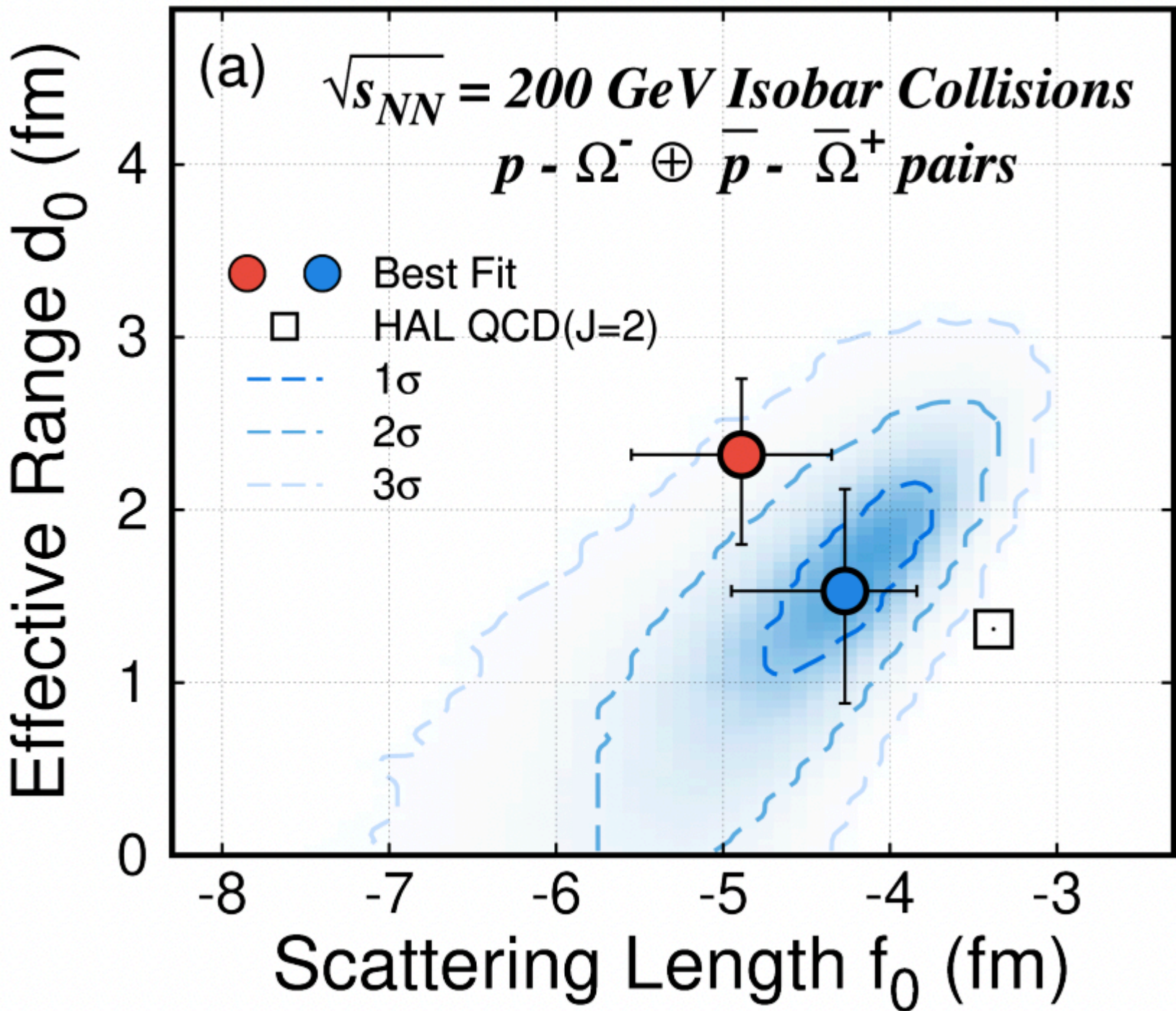
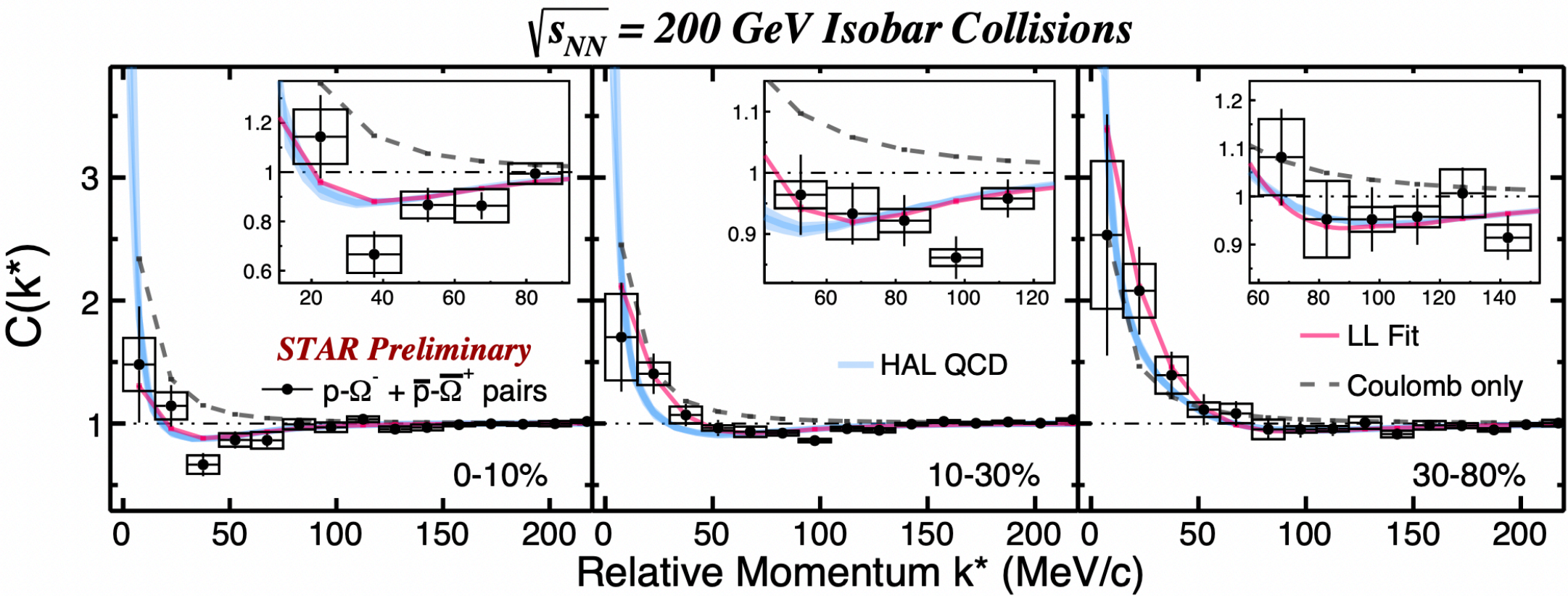


p-Ω correlations

- Use correlation femtoscopy to study YN interactions

- Depletion in $C(k^*)$ around $k^* \sim 30 - 100$ MeV/c: indication of bound state

Lednicky-Lyuboshitz fit to extract strong interaction parameters



- Negative scattering length (f_0) for p - Ω interactions
- First experimental evidence for strange di-baryon bound state

$$BE_{p\Omega} = \frac{1}{2m_{p\Omega}d_0^2} \left(1 - \sqrt{1 + \frac{2d_0}{f_0}}\right)^2$$

Poster by Ke Mi, #669

Talk by Kehao Zhang, Tue, P21

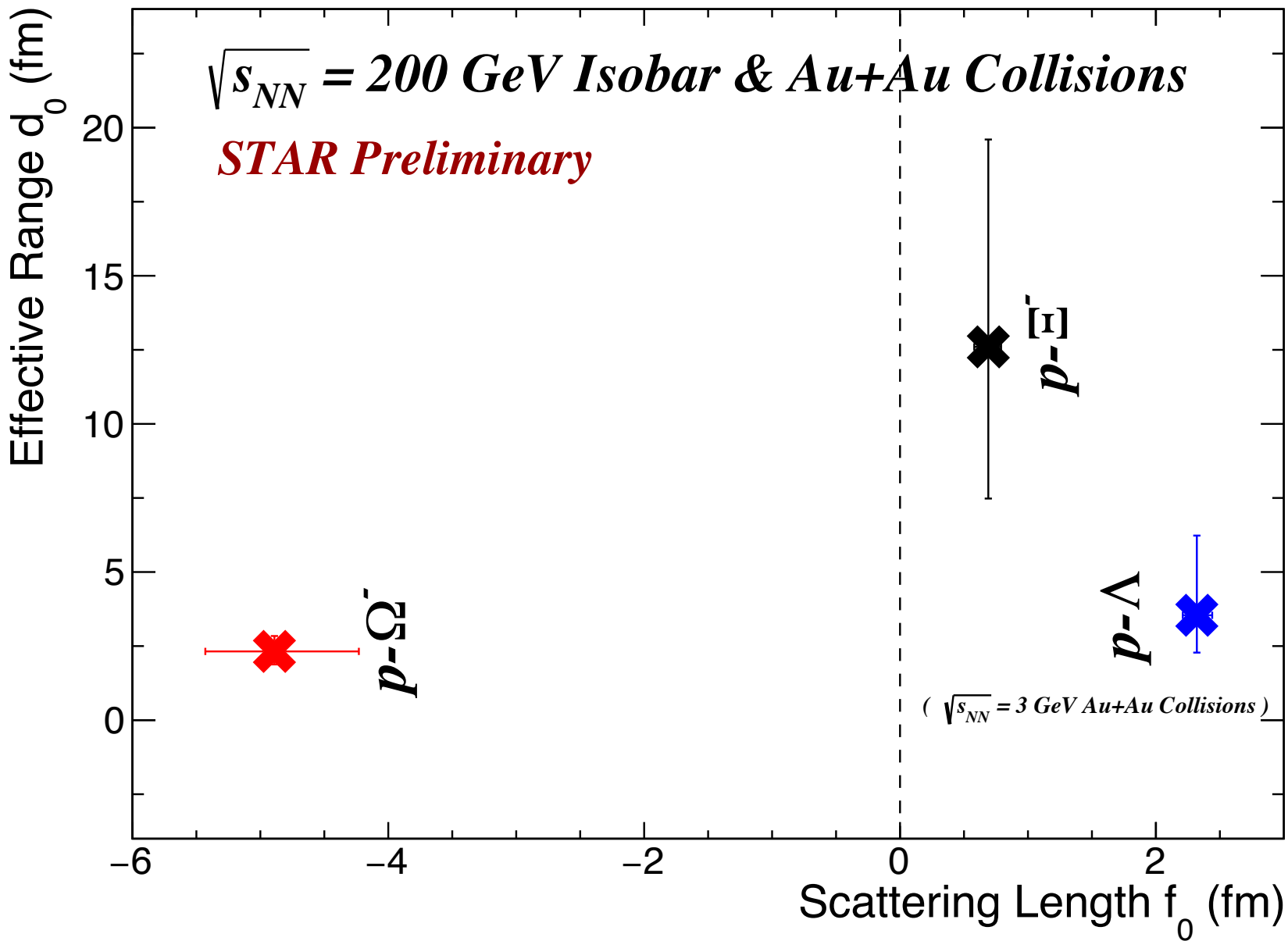
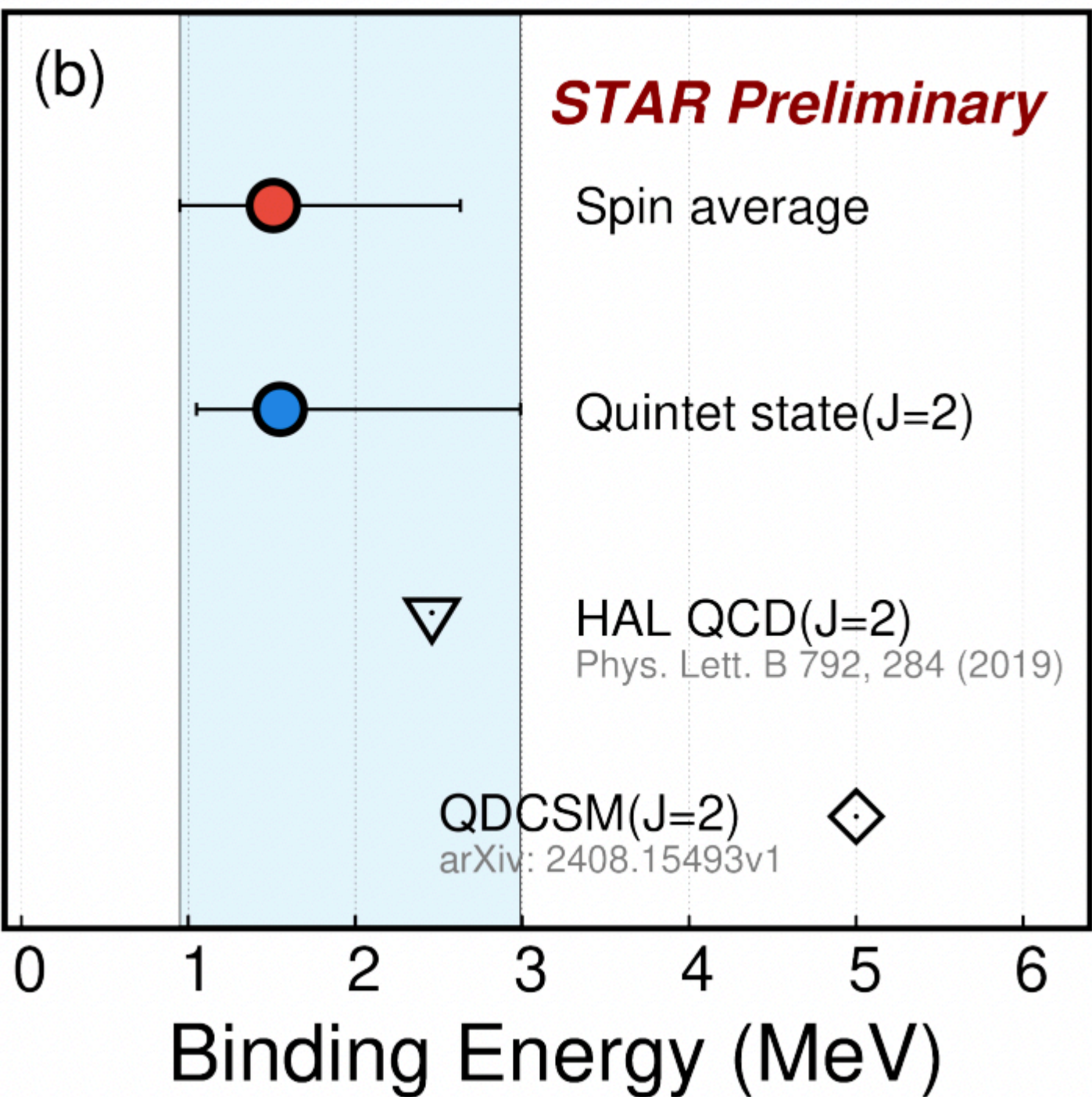
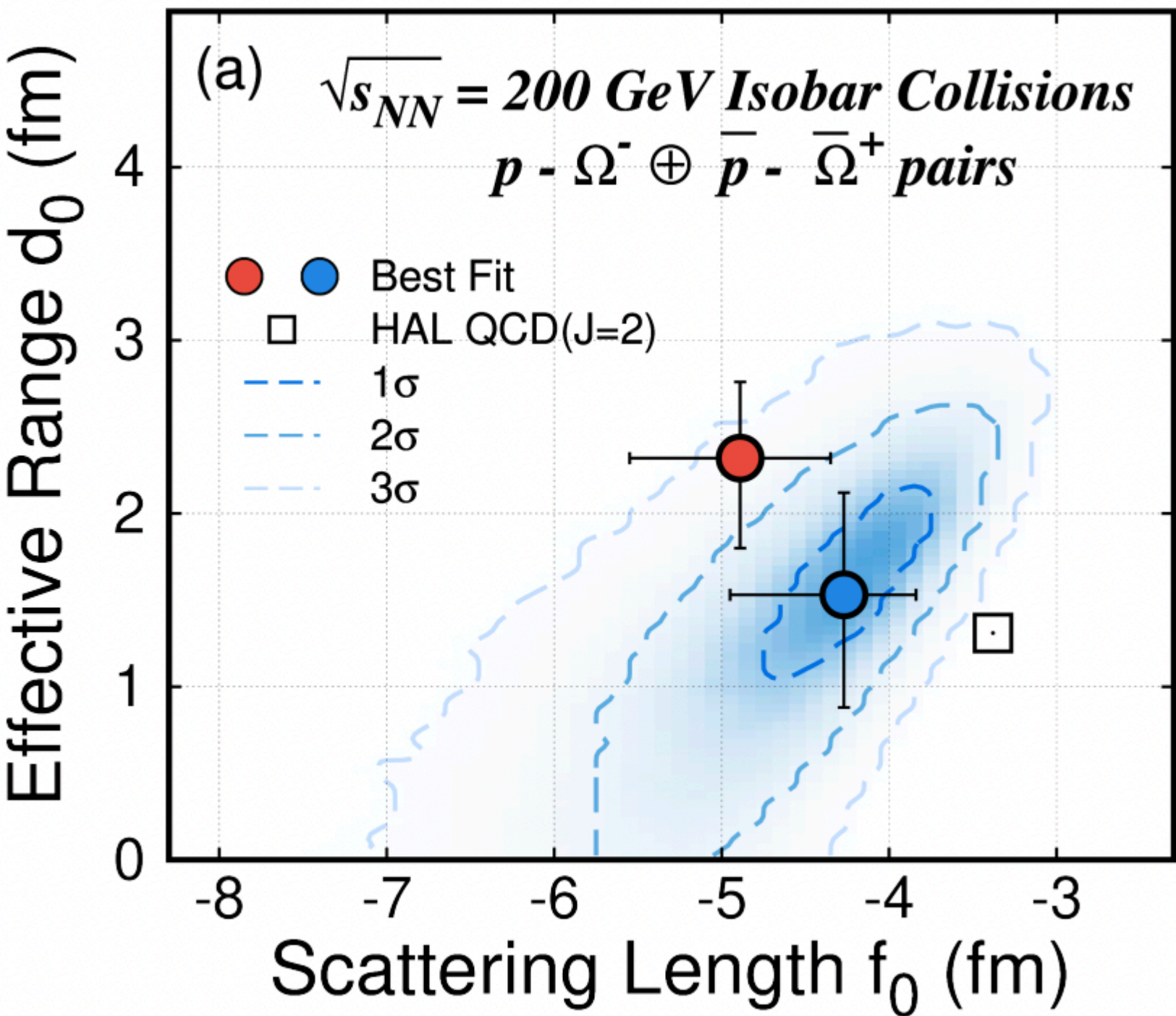
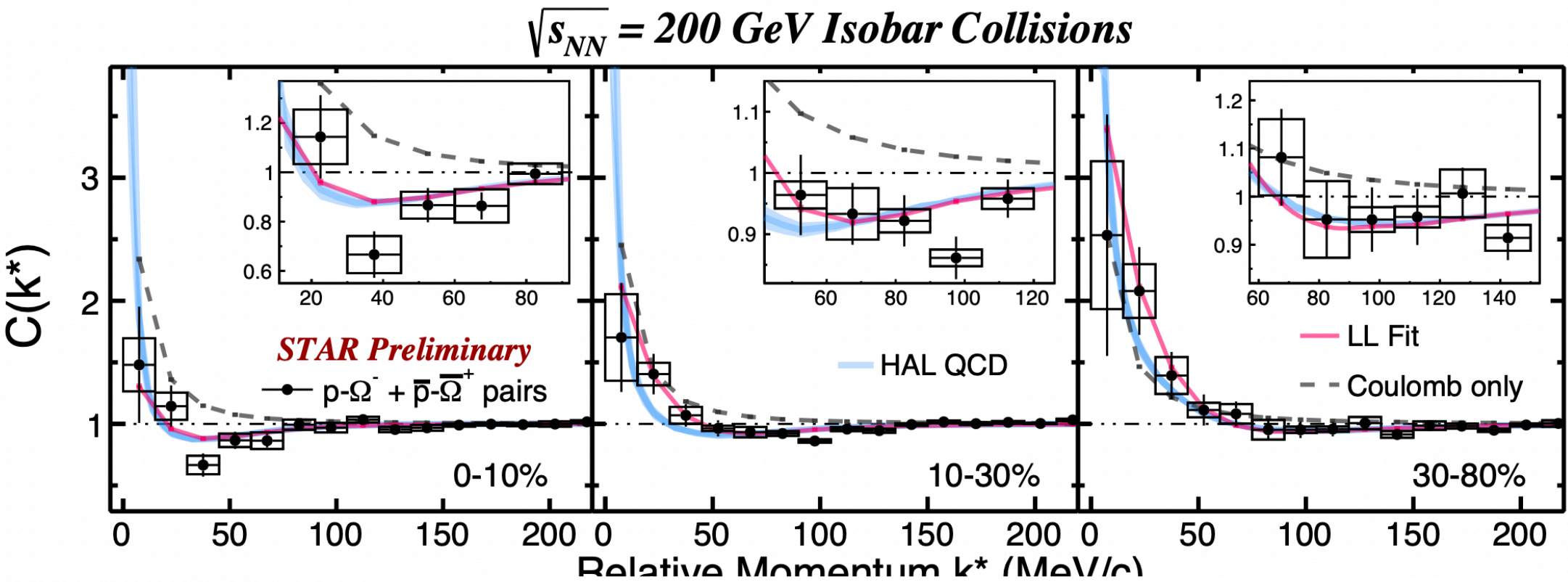


p-Ω correlations

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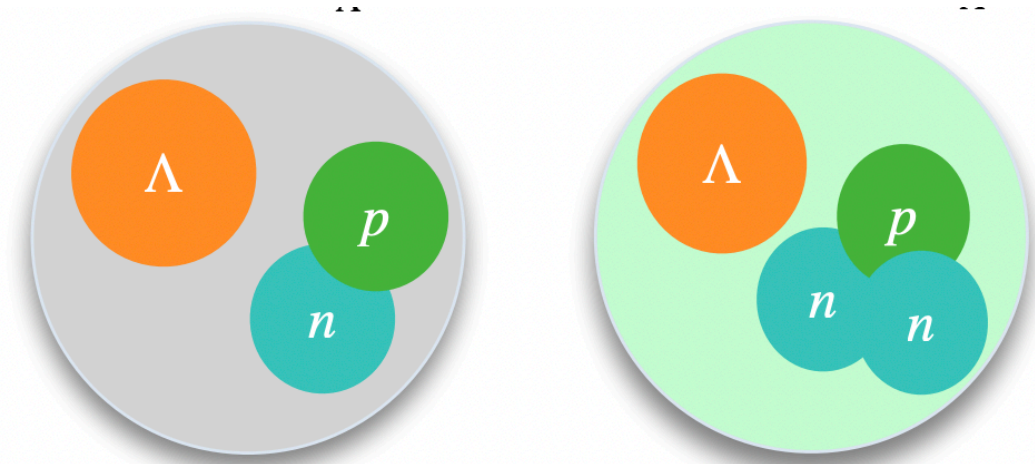
Lednicky-Lyuboshitz fit to extract strong interaction parameters



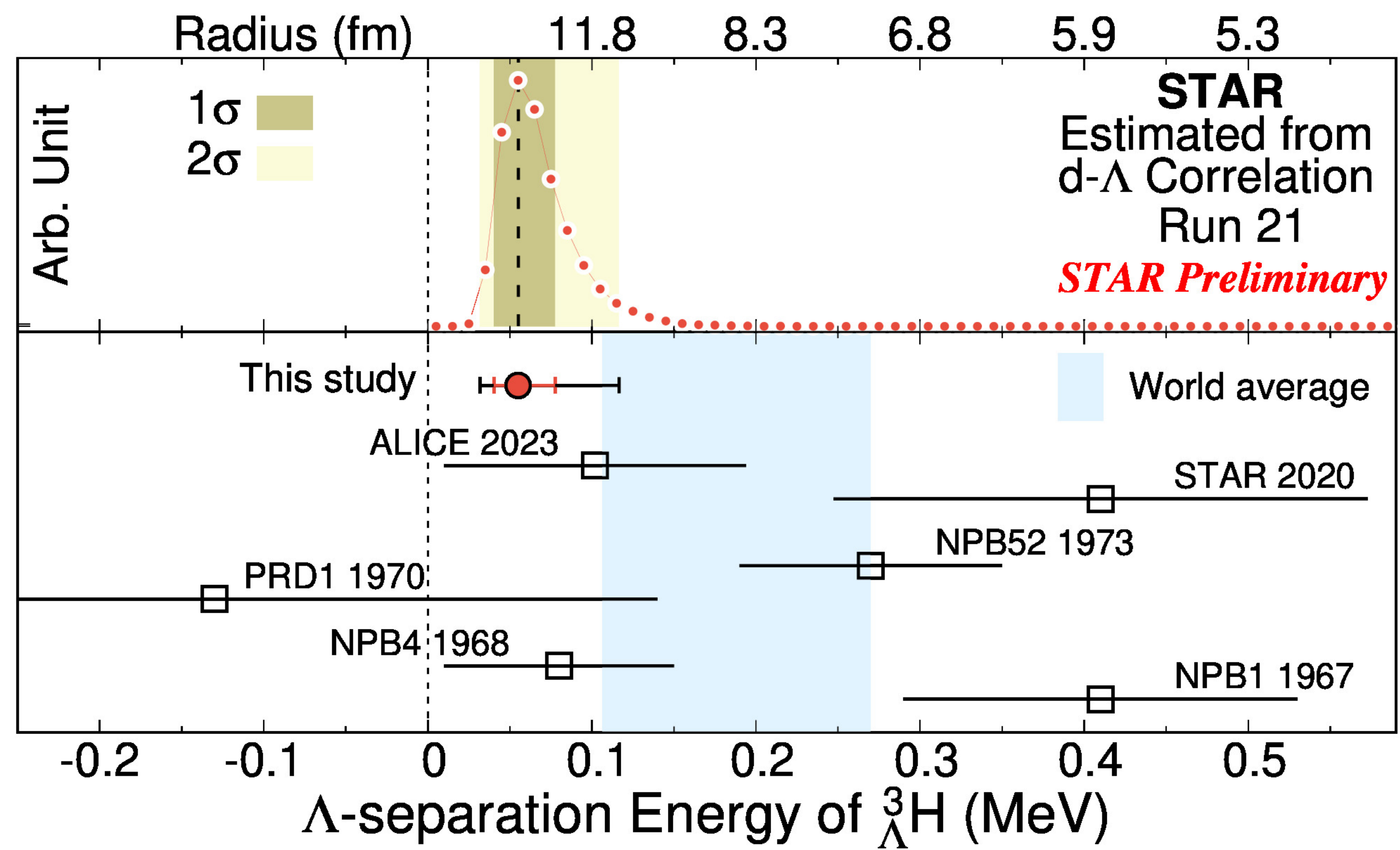
- Positive f_0 for $p-\Xi$ and $p-\Lambda$ correlations



Light nuclei femtoscopy



- Y-N interactions important to understand neutron star EoS and structure of hyper-nuclei
- High-statistics BES-II data at high μ_B to explore

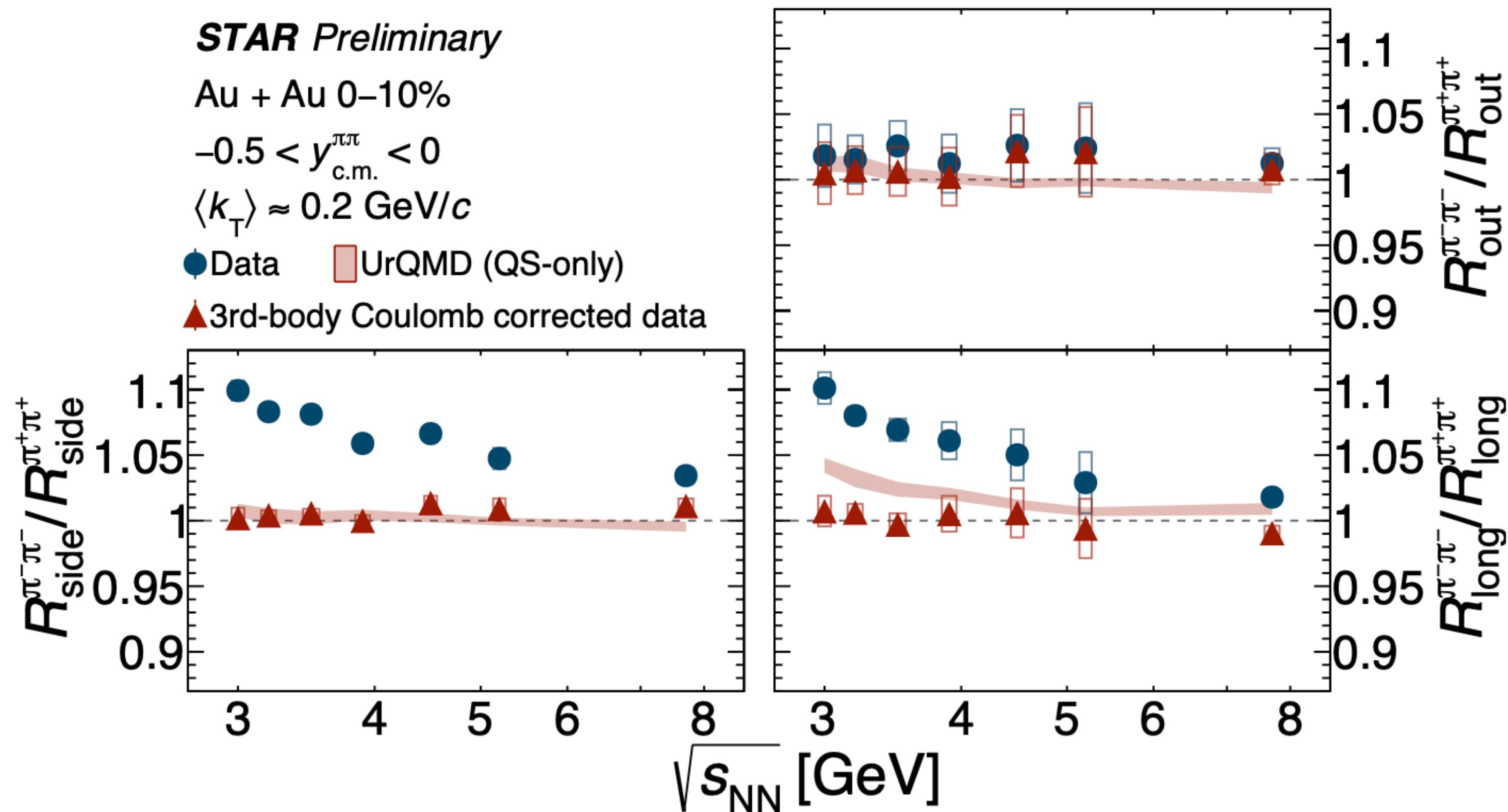


- Most accurate extraction of hyper triton BE using d - Λ correlations
- Measurements also of t - Λ and He3 - Λ correlations



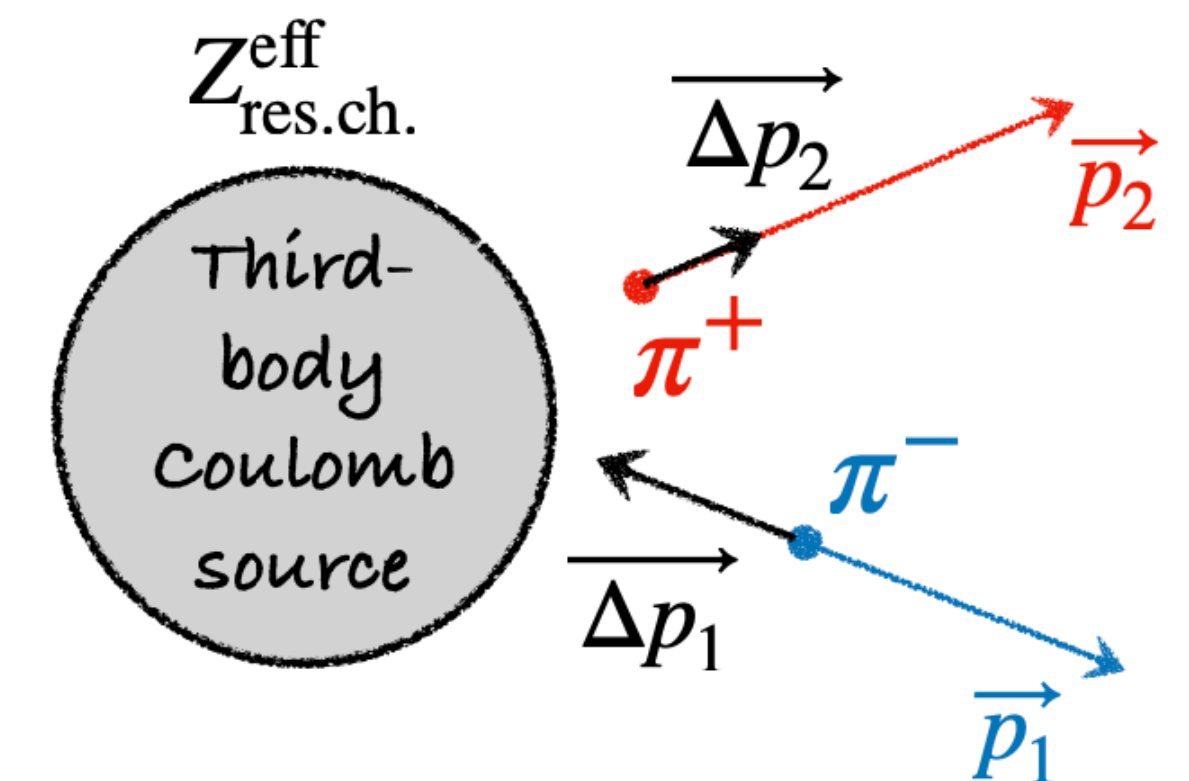
3rd body Coulomb interactions

- Isolate 3rd body Coulomb effect:
 - Extract $Z_{\text{res}}^{\text{eff}}$ from π^+/π^- yield ratio,
 - Calculate Δp needed to produce the 3rd body Coulomb effect in UrQMD
 - Get correlation functions with the momentum shift



Measured femtoscopic source radii different for $\pi^+ \pi^+$ and $\pi^- \pi^-$ pairs

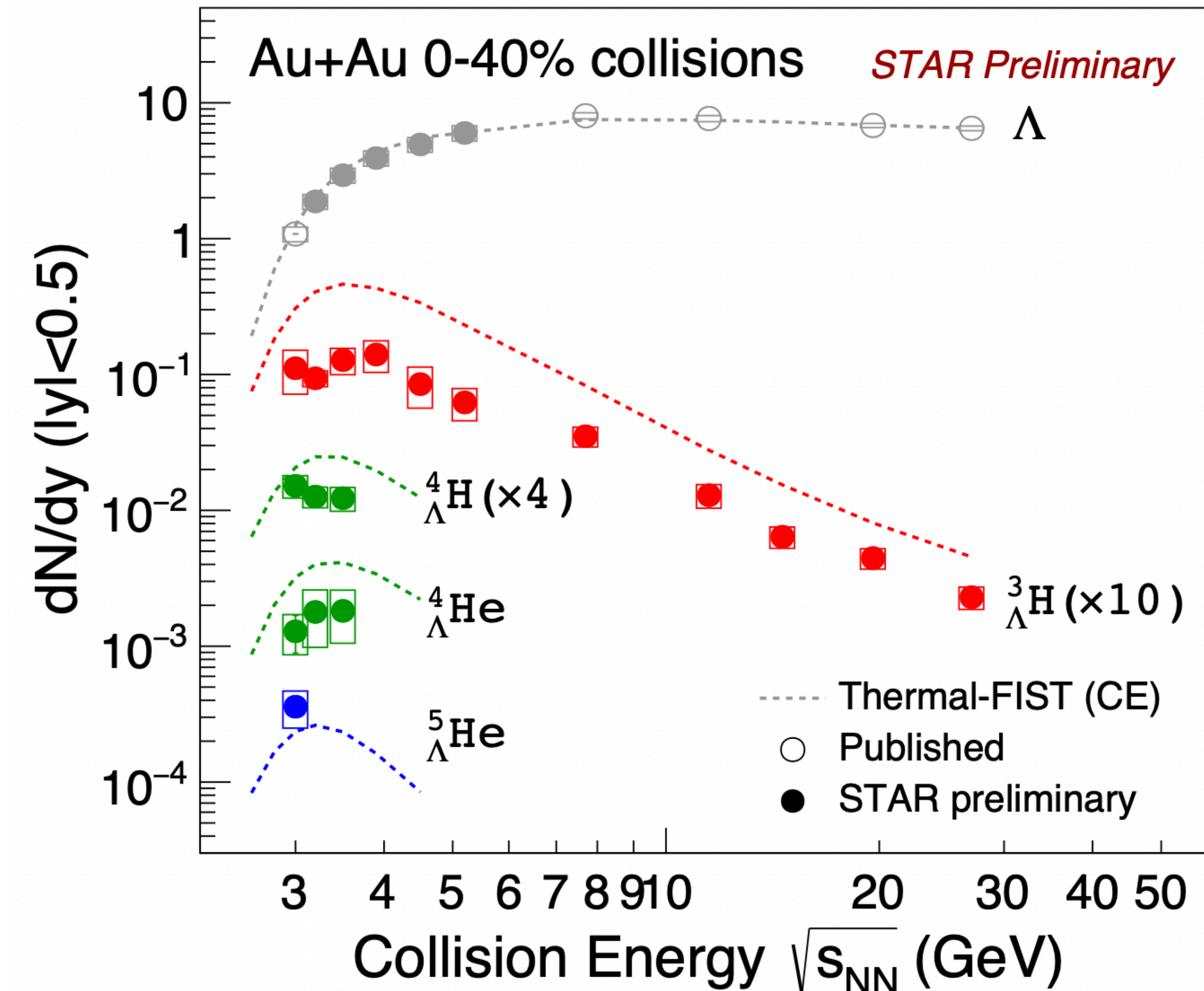
3rd body Coulomb effect or isospin of the system?



- Correlation functions consistent after removal of 3rd body Coulomb effect
- No significant isospin contribution seen

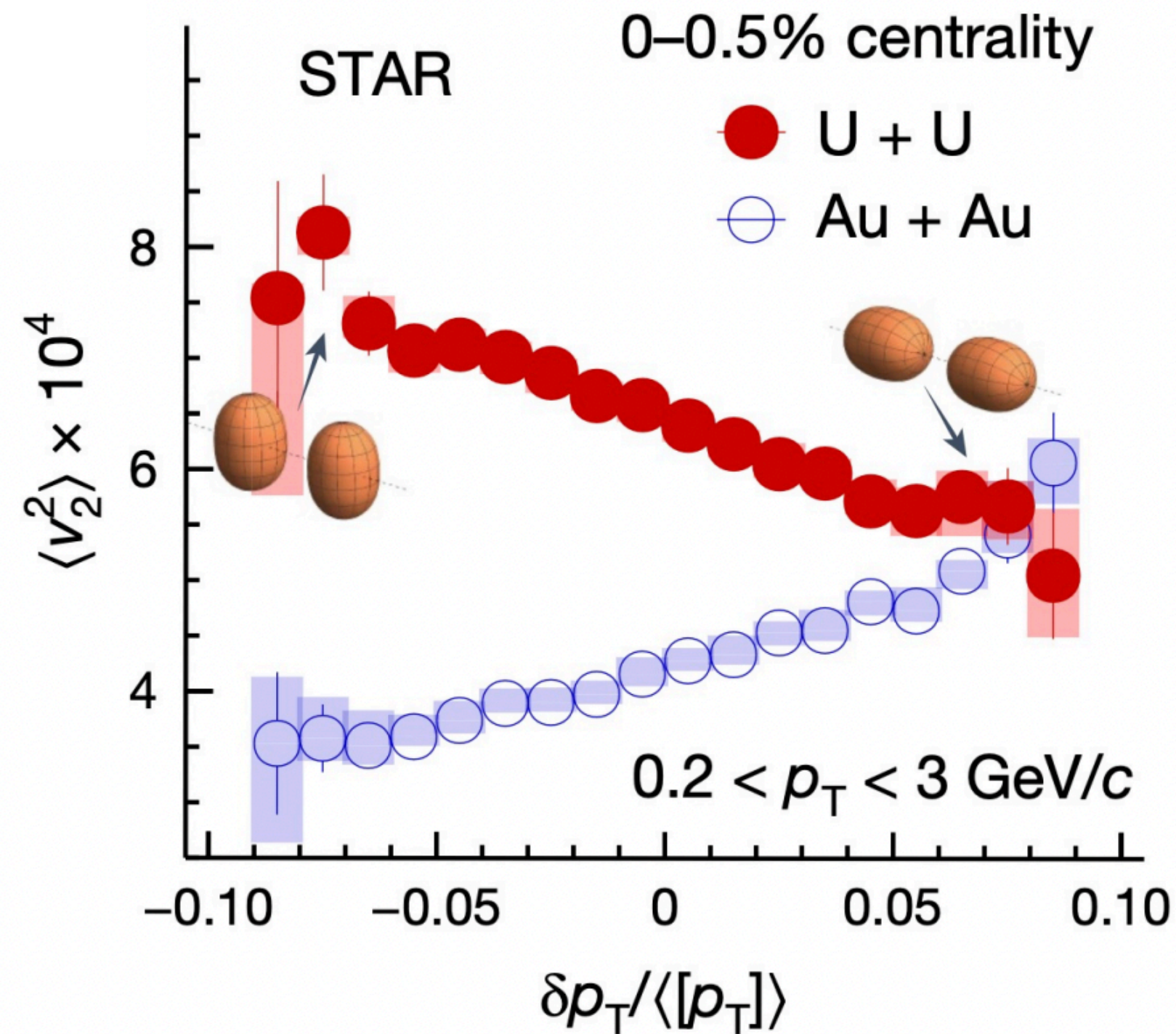
Hypernuclei measurements

- Hypernuclei production valuable tool to study Y-N interactions



- Extensive measurements of different hypernuclei from BES-II
- First measurement of $A = 5$ hypernuclei
- Thermal model over-predicts yields for most of the measured hypernuclei in the high μ_B region
 - Thermal model: feed-down correction not included for ${}^5_{\Lambda}He$

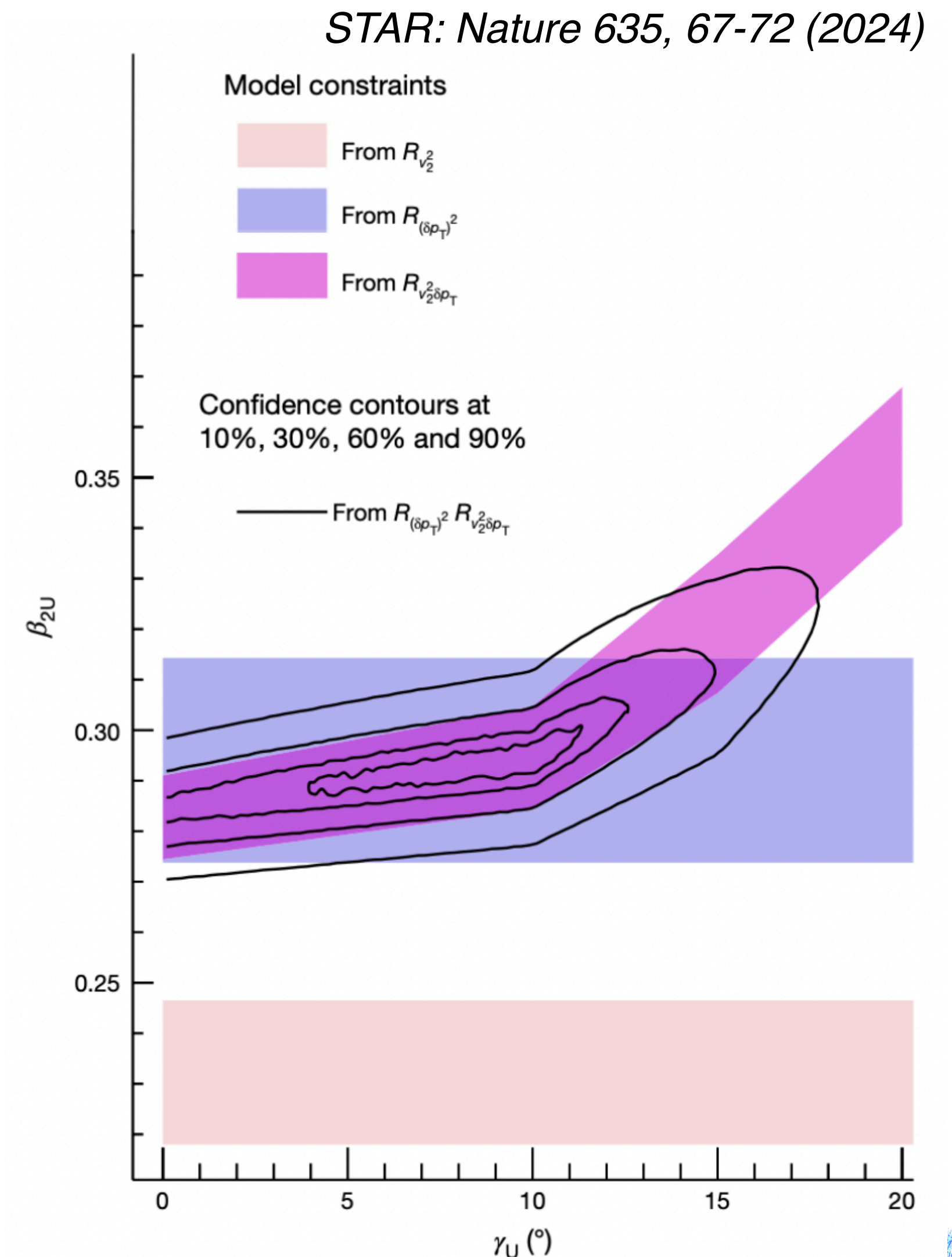
Nuclear imaging with HIC

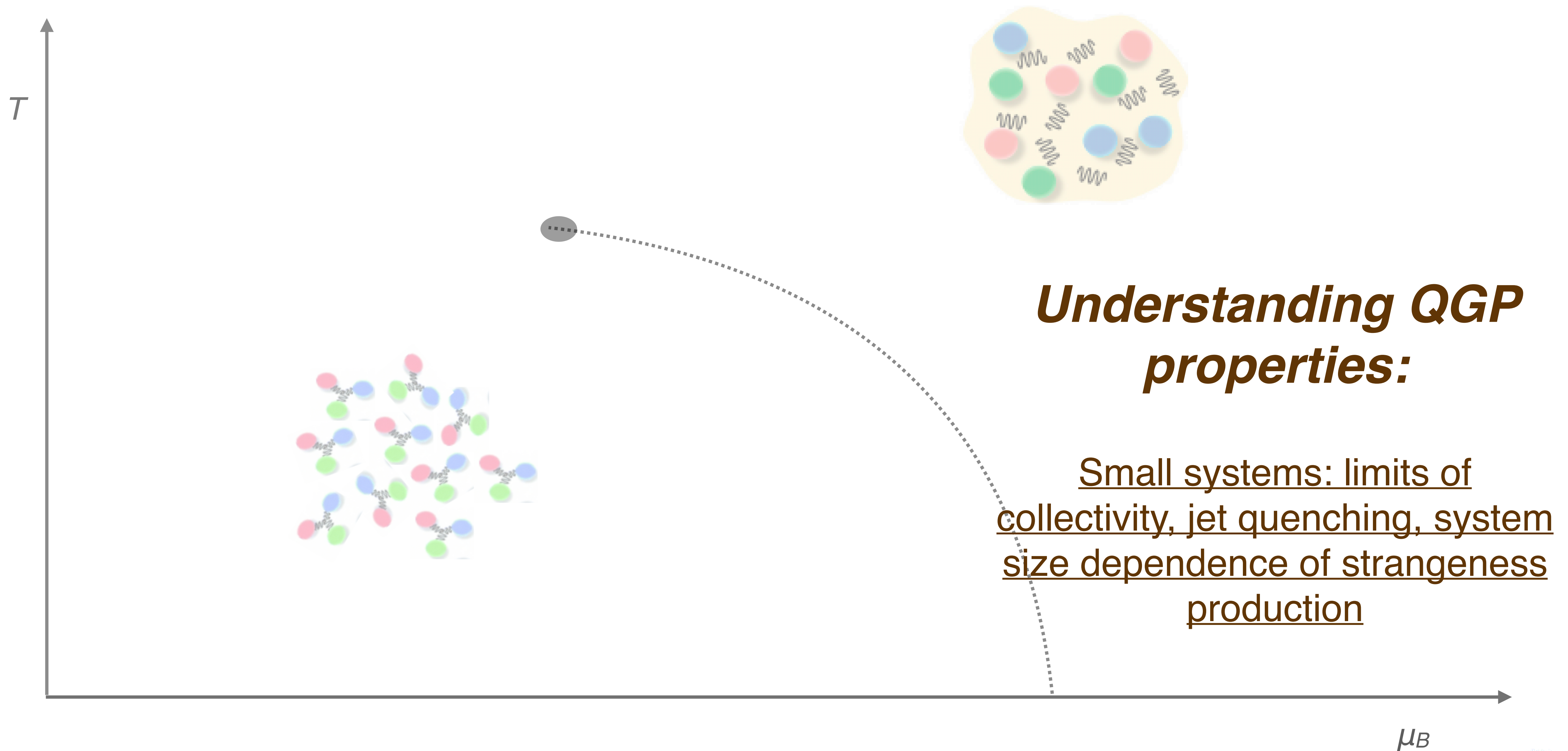


- Nuclear structure leaves imprints on v_n and $v_n - p_T$ correlations
- Compare similar-sized systems U+U, Au+Au or Ru+Ru, Zr+Zr to gain insights on nuclear structure

- Extracted U+U shape parameters β_2 and γ
 $\beta_{2U} = 0.297 \pm 0.015$; $\gamma_U = 8.5^\circ \pm 4.8^\circ$

Large quadrupole deformation, consistent with low-energy measurements and indication of small triaxiality in U+U ground state

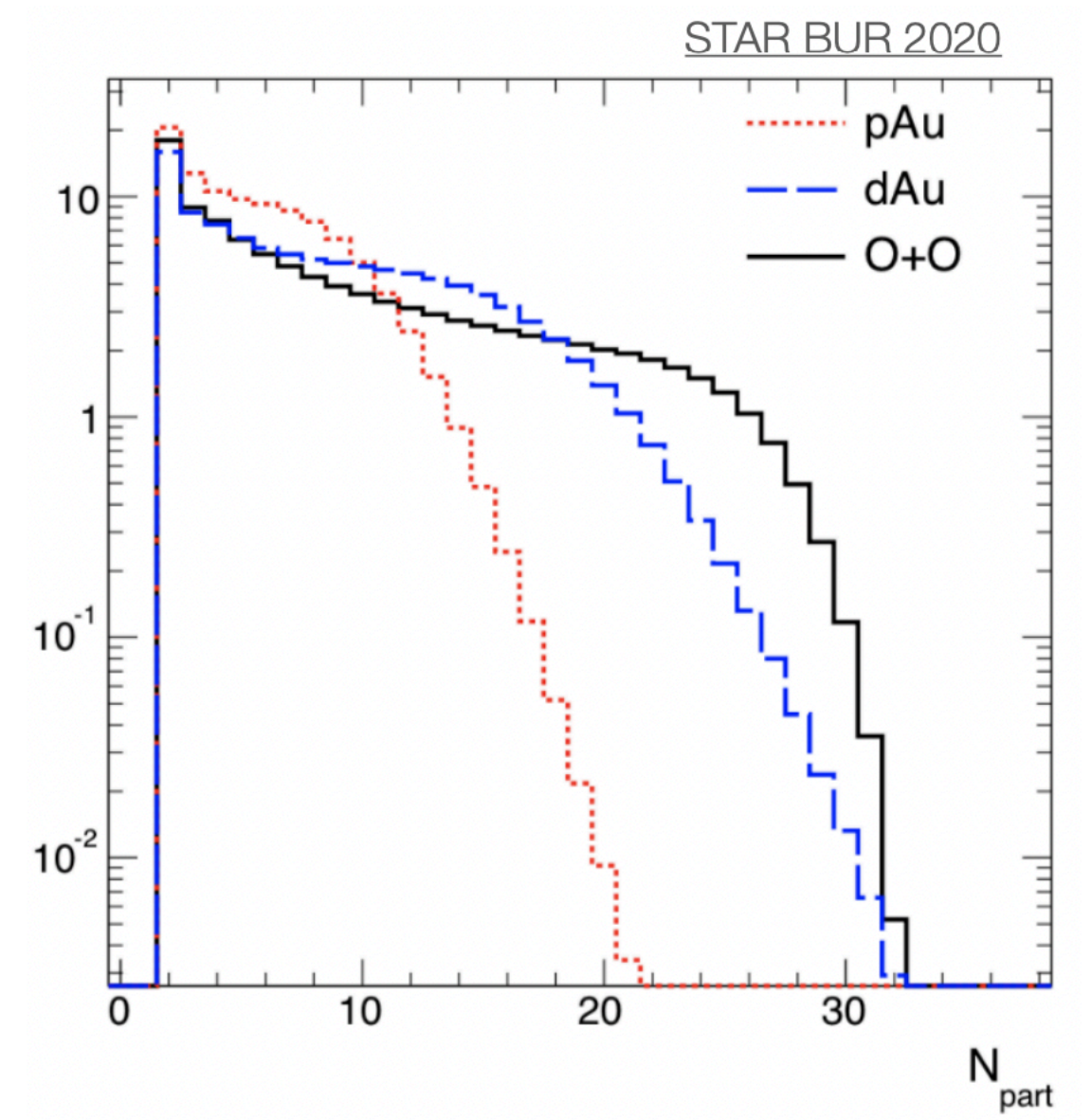
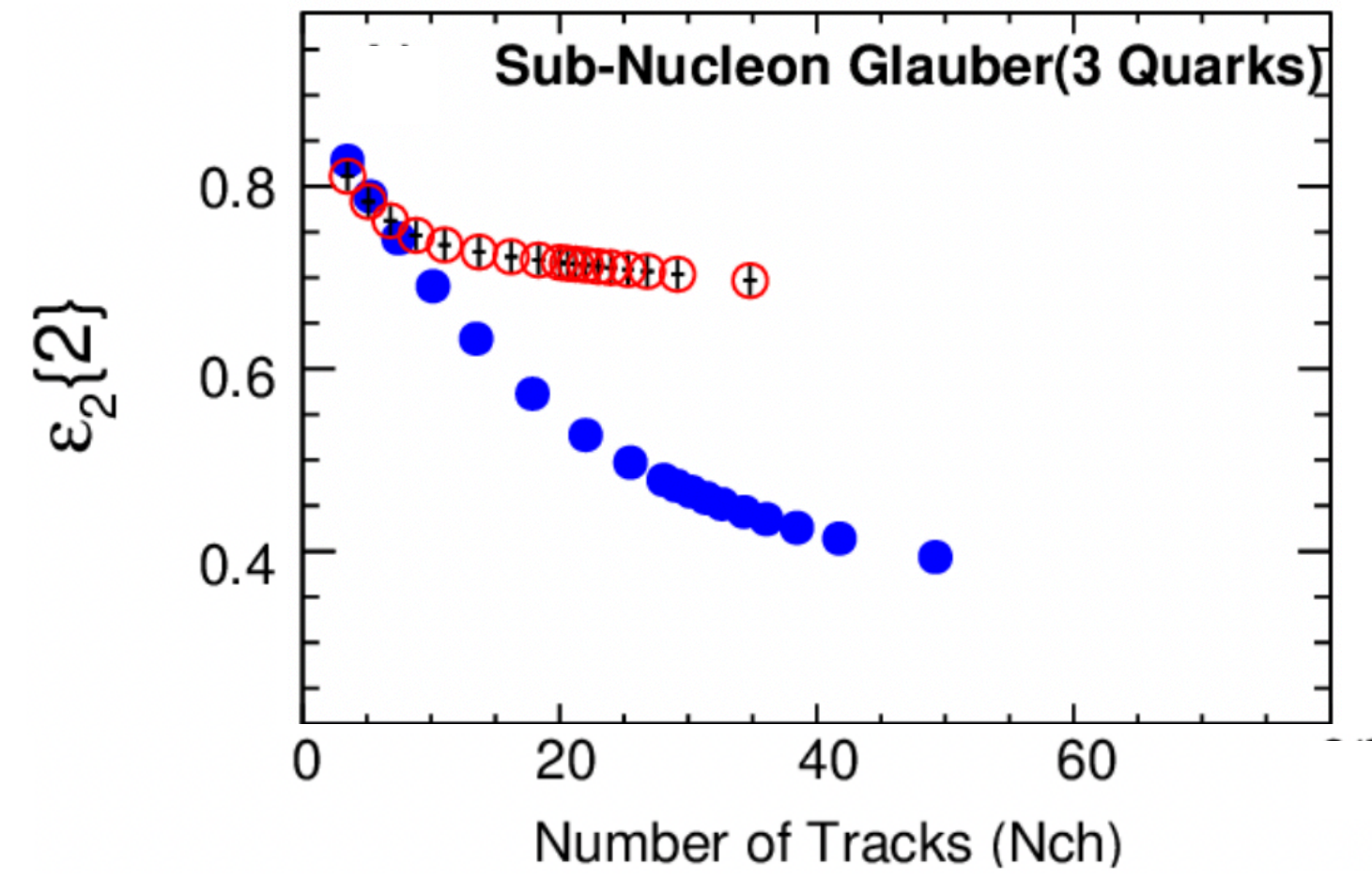




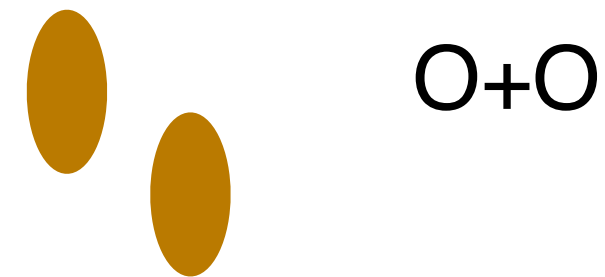
Origin of collectivity in small systems



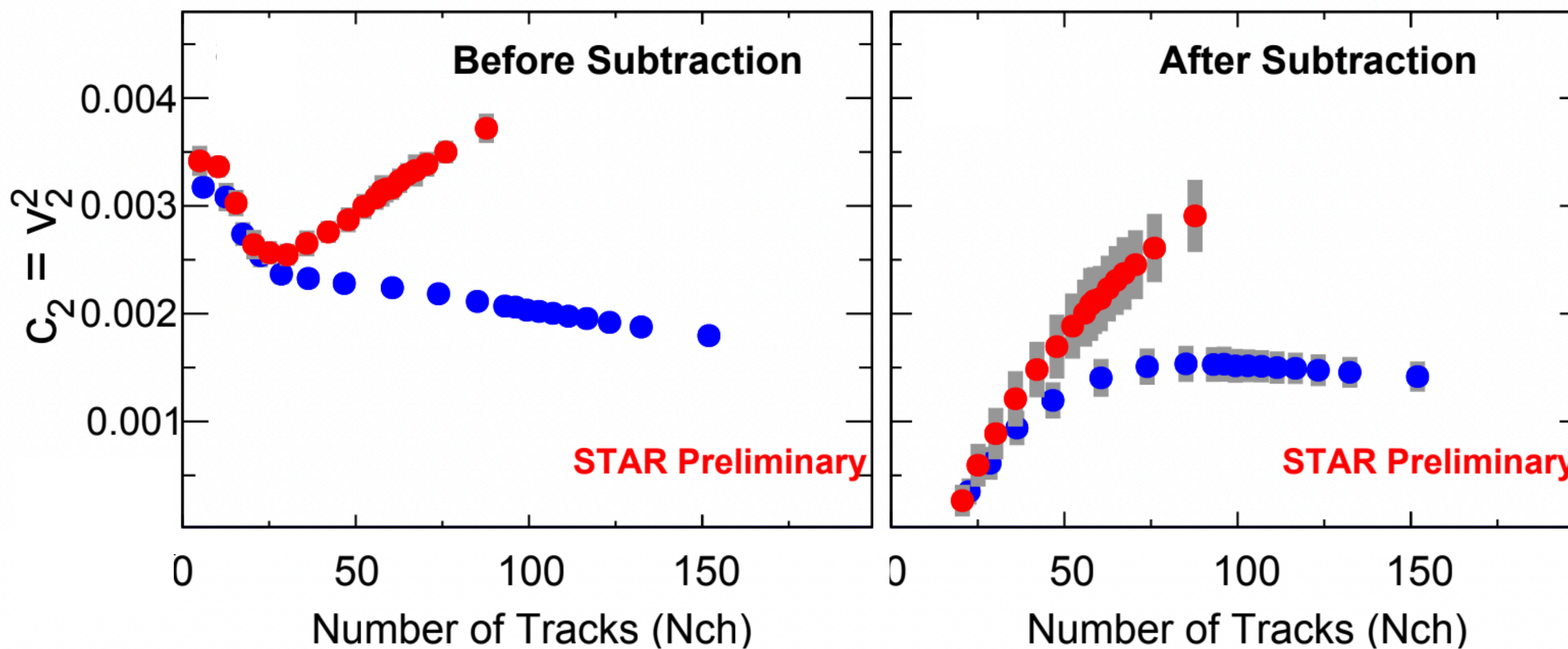
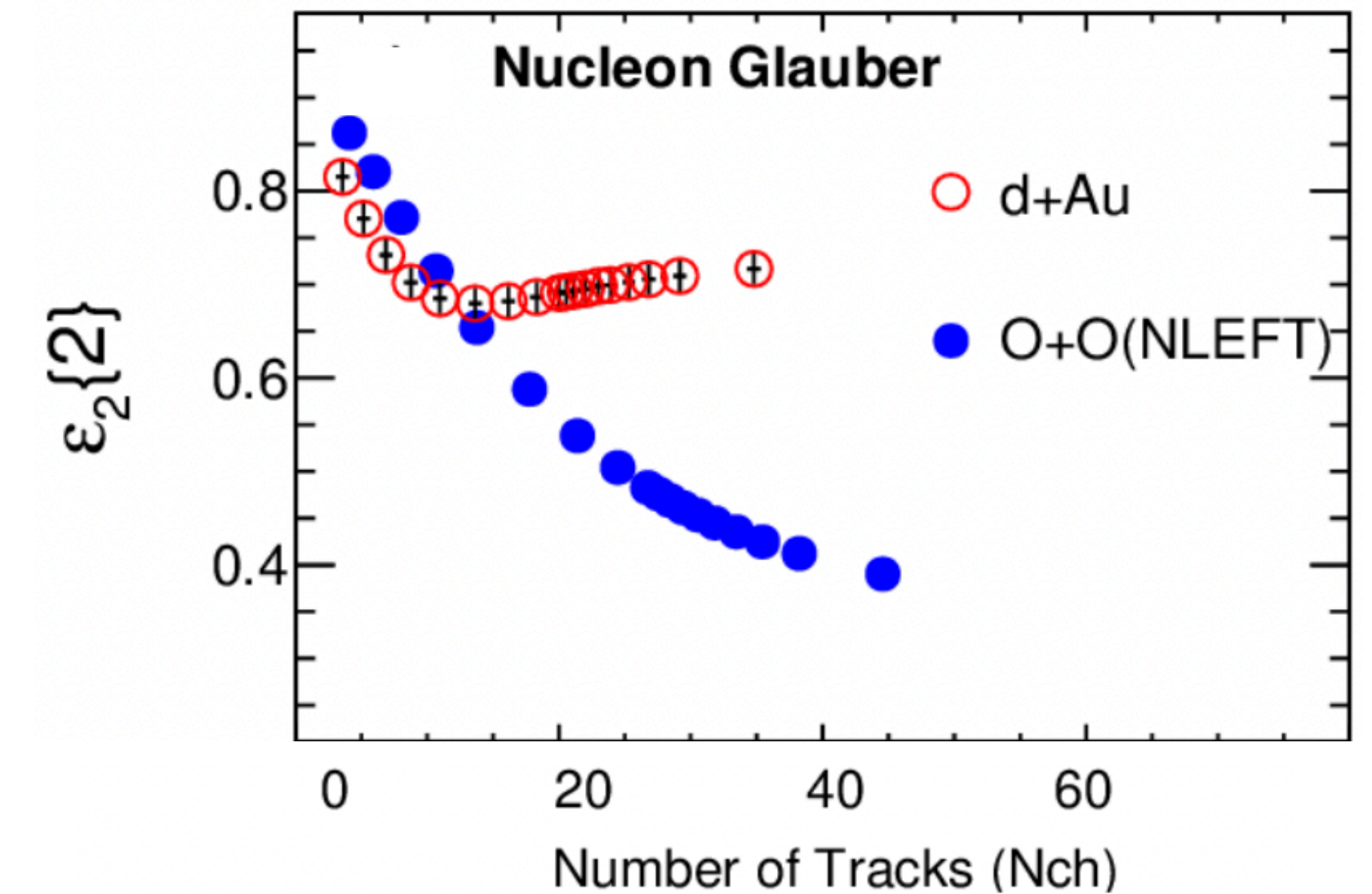
- A better geometry scan with d+Au and O+O
- Similar-sized systems, but large difference in ϵ_2 in the small systems d+Au and O+O



Origin of collectivity in small systems

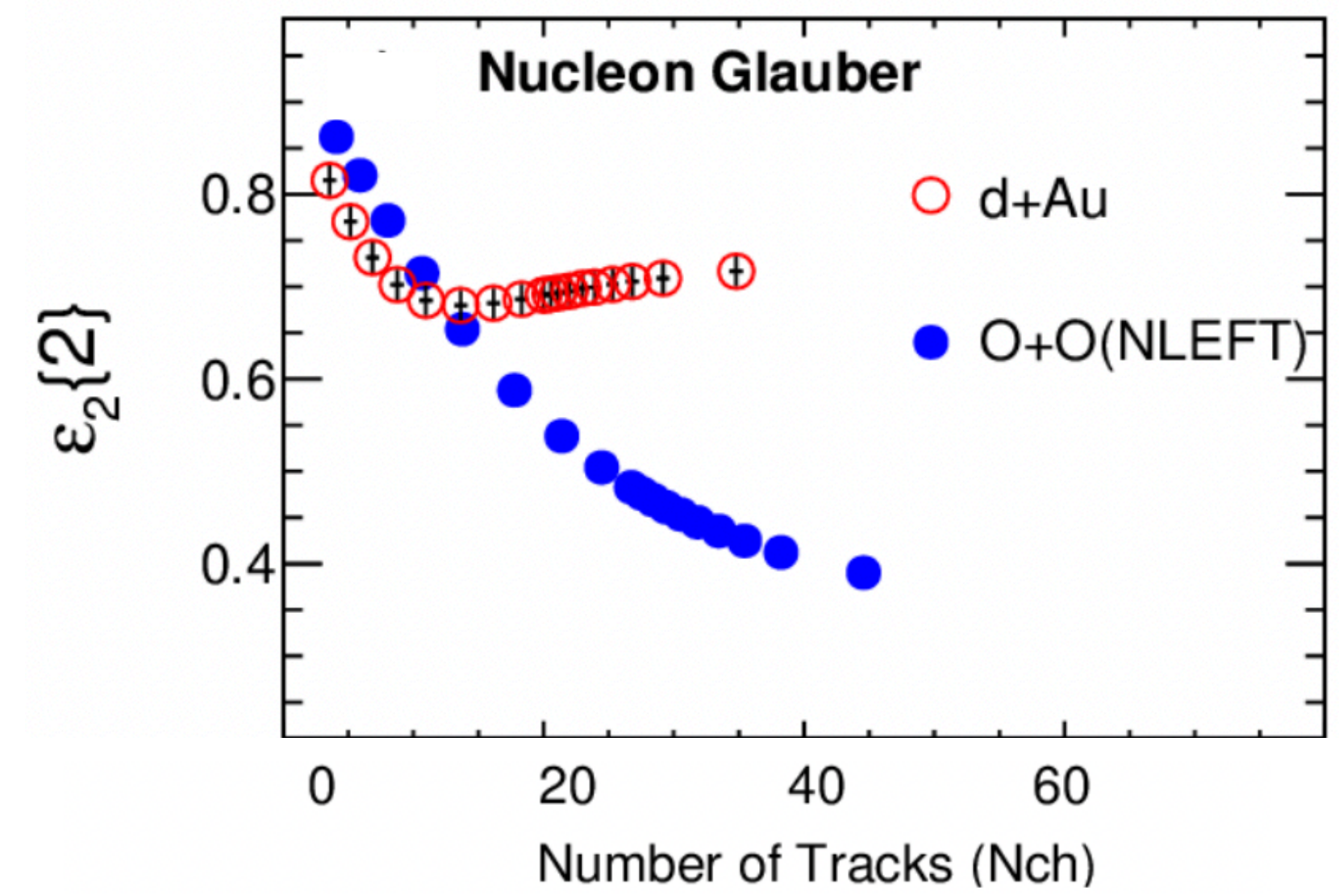
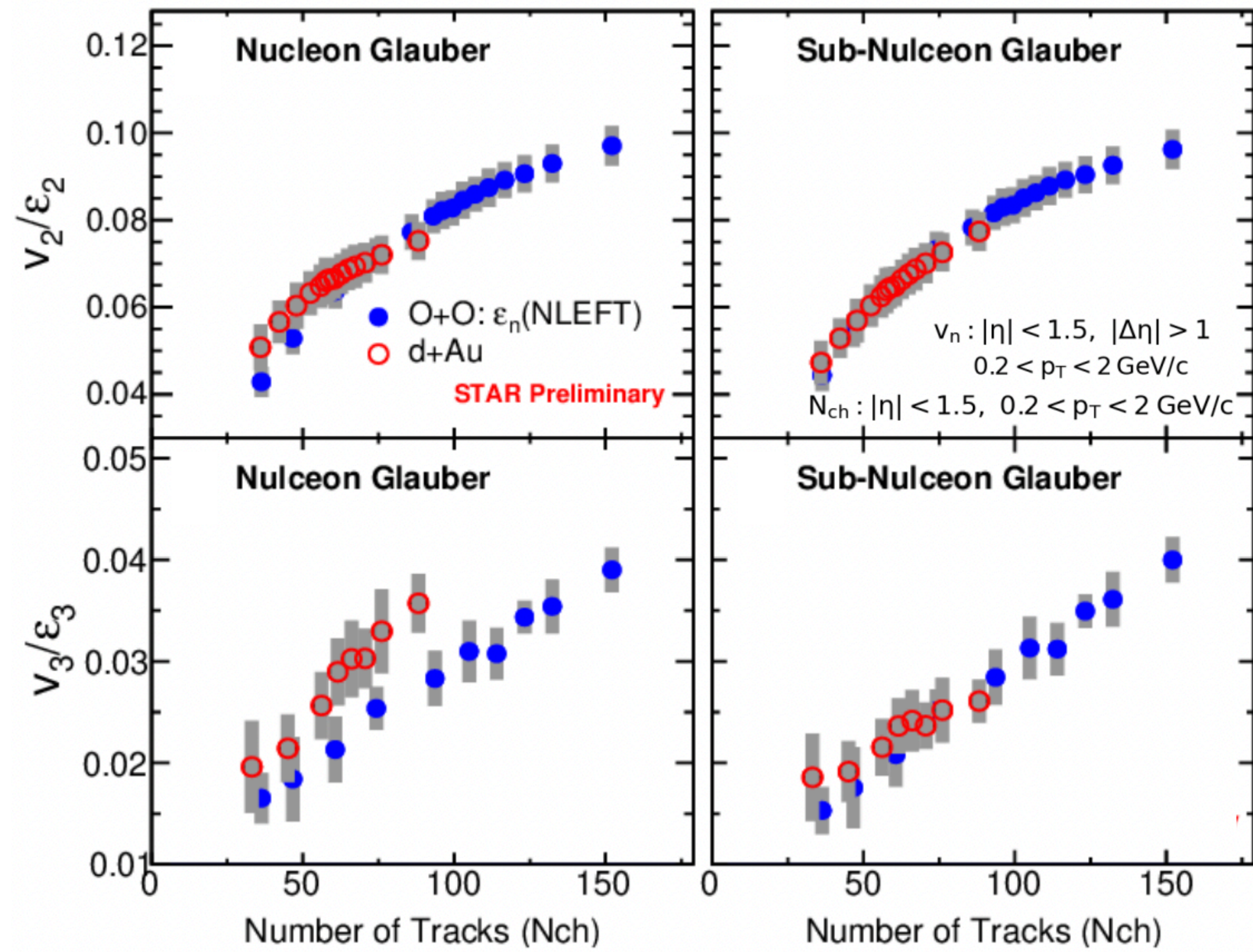


- A better geometry scan with d+Au and O+O
- Similar-sized systems, but large difference in ε_2 in the small systems d+Au and O+O



- Clear scaling with geometry seen
- Origin of small-system v_2 from geometry response

Origin of collectivity in small systems



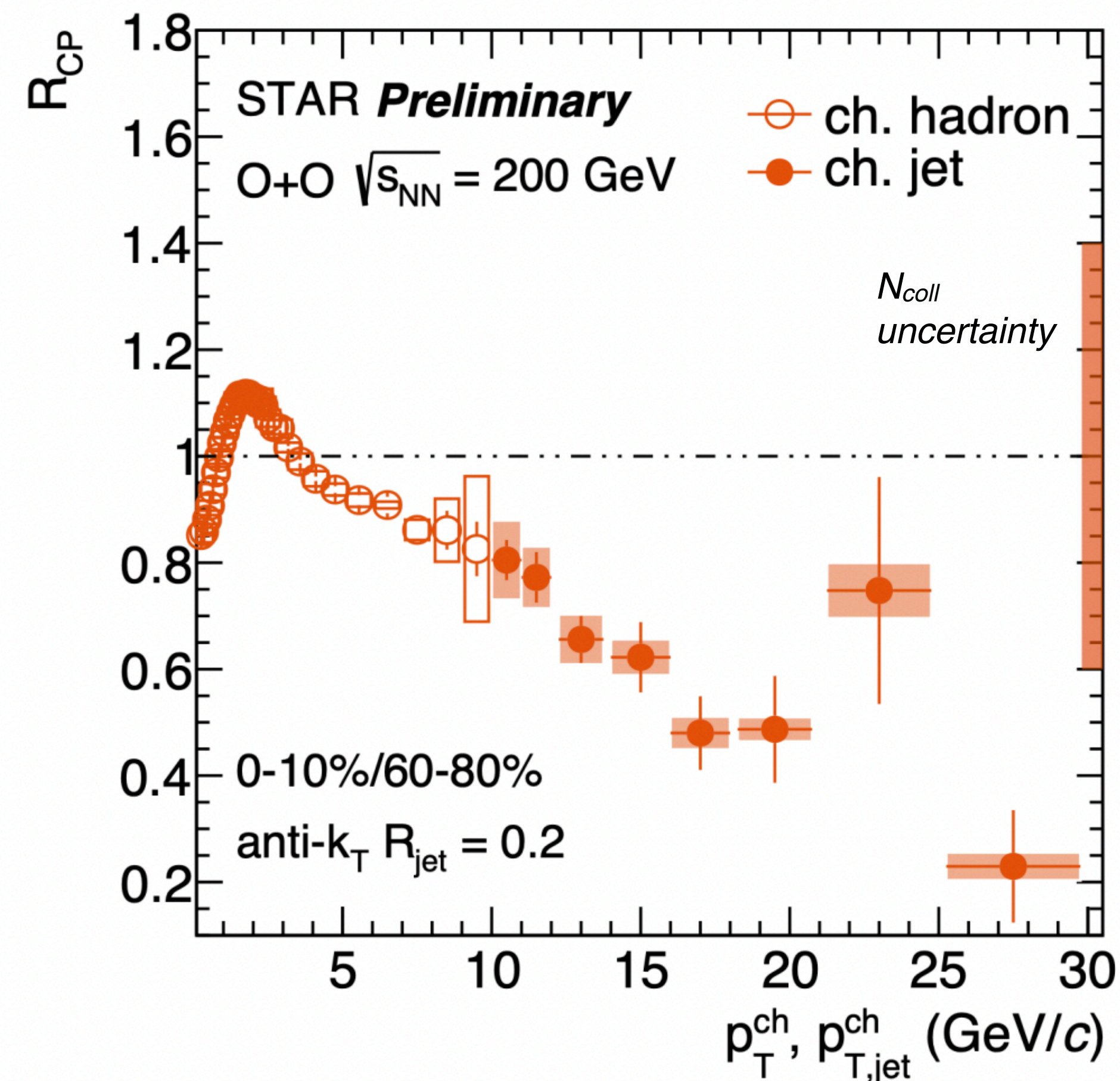
- Both v_2 and v_3 scale well with eccentricities from sub-nucleon Glauber



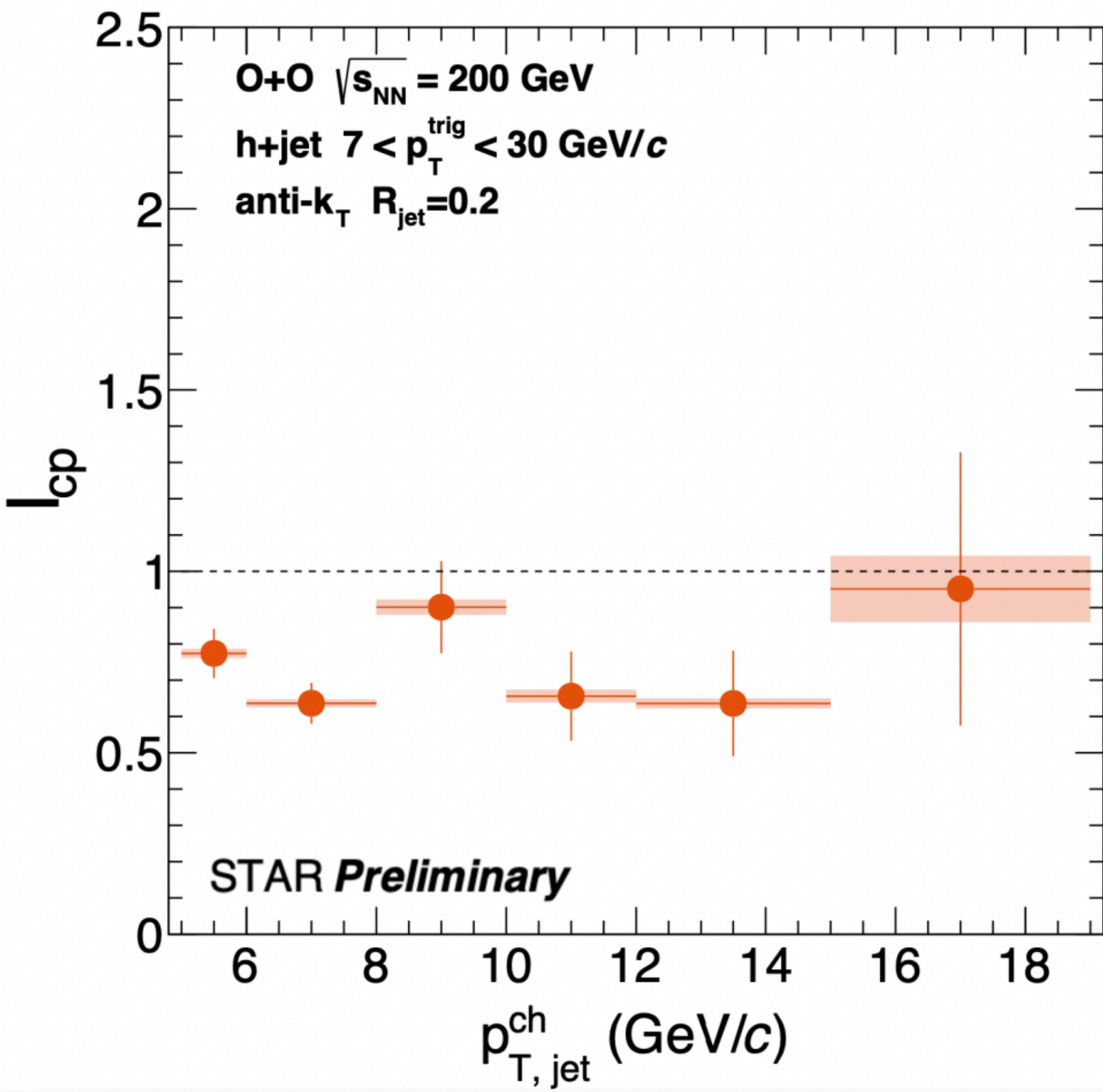
Jet quenching in O+O

Do we see jet quenching in small systems?

Inclusive hadrons and jets



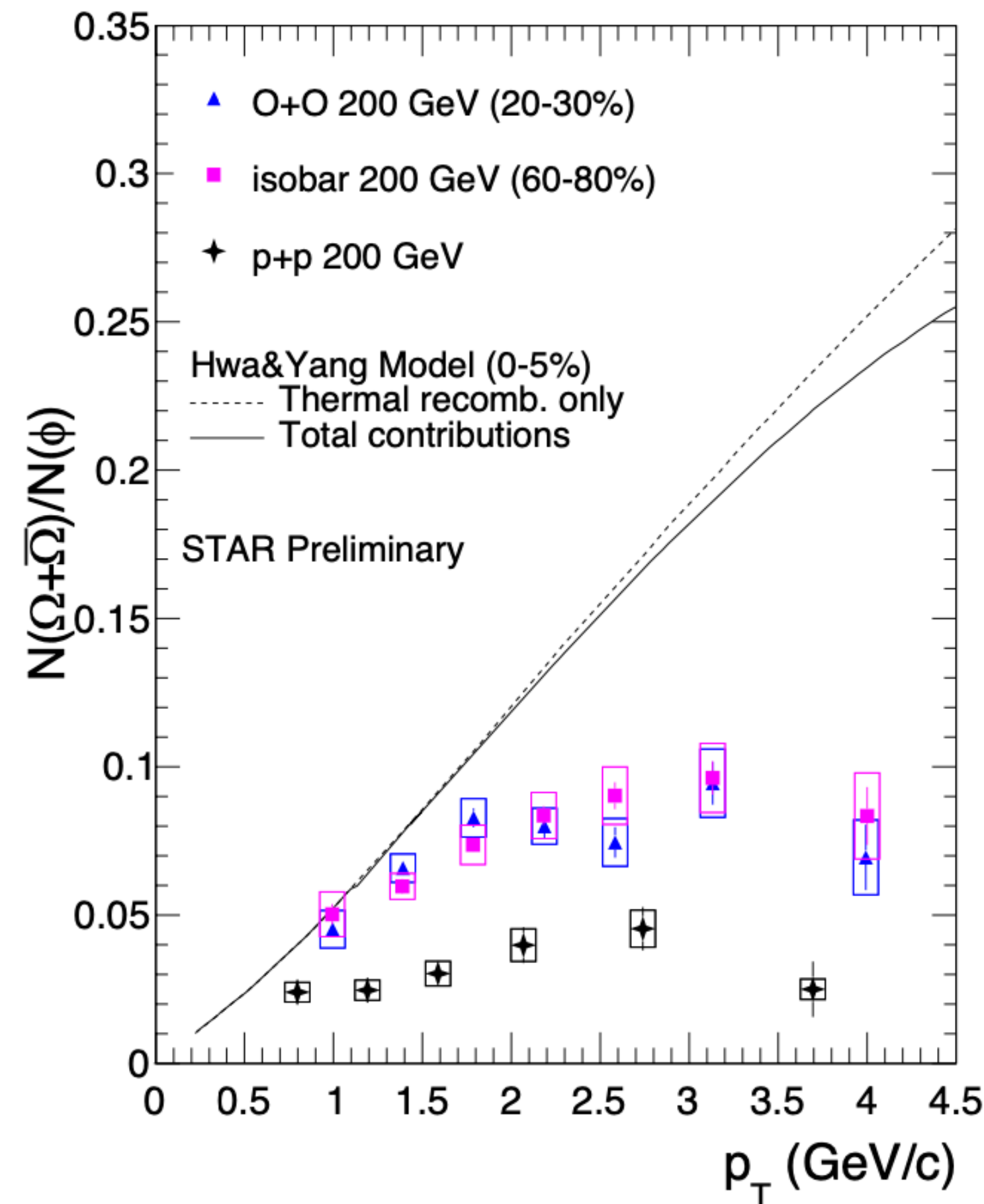
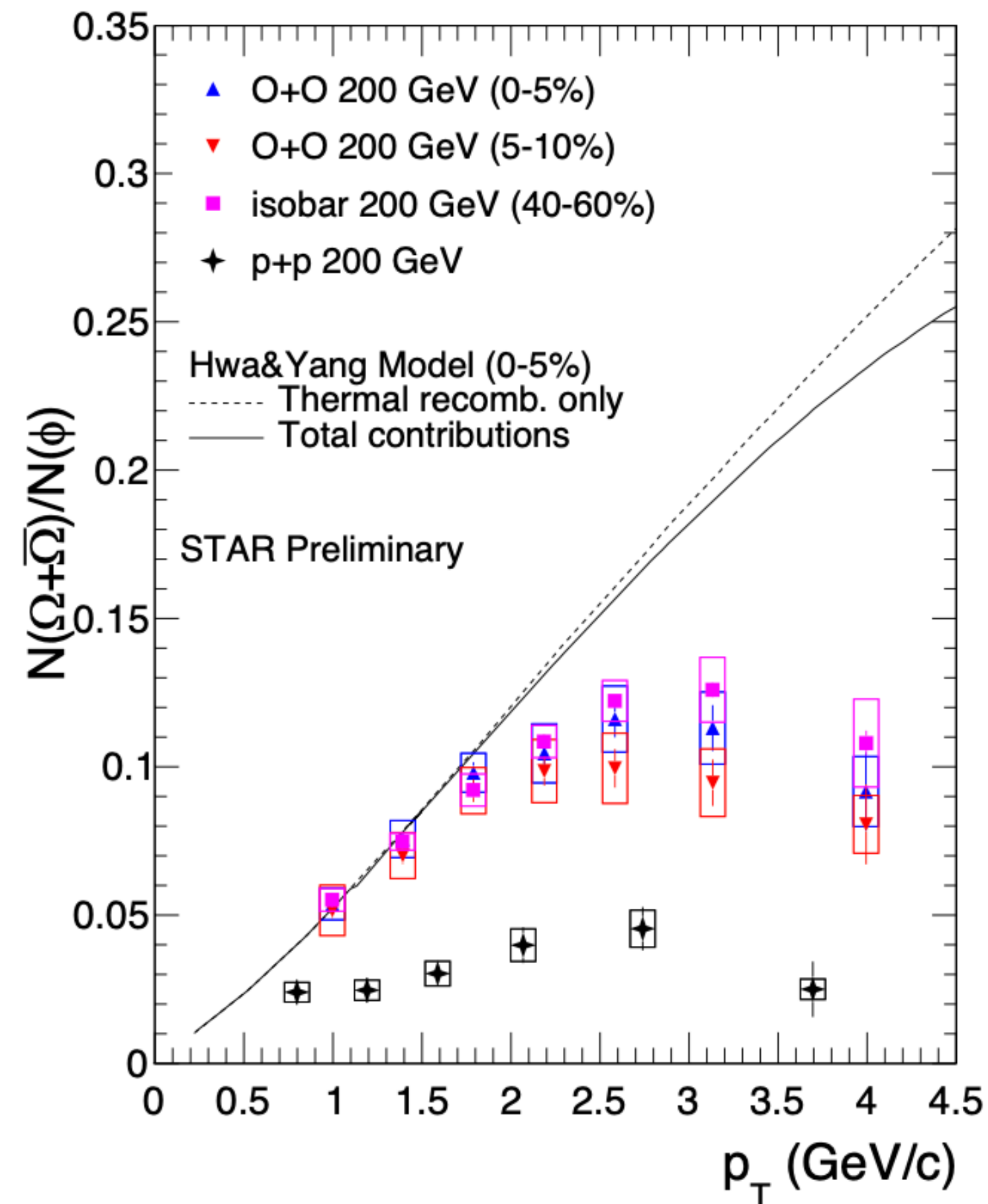
Semi-inclusive h triggered jets



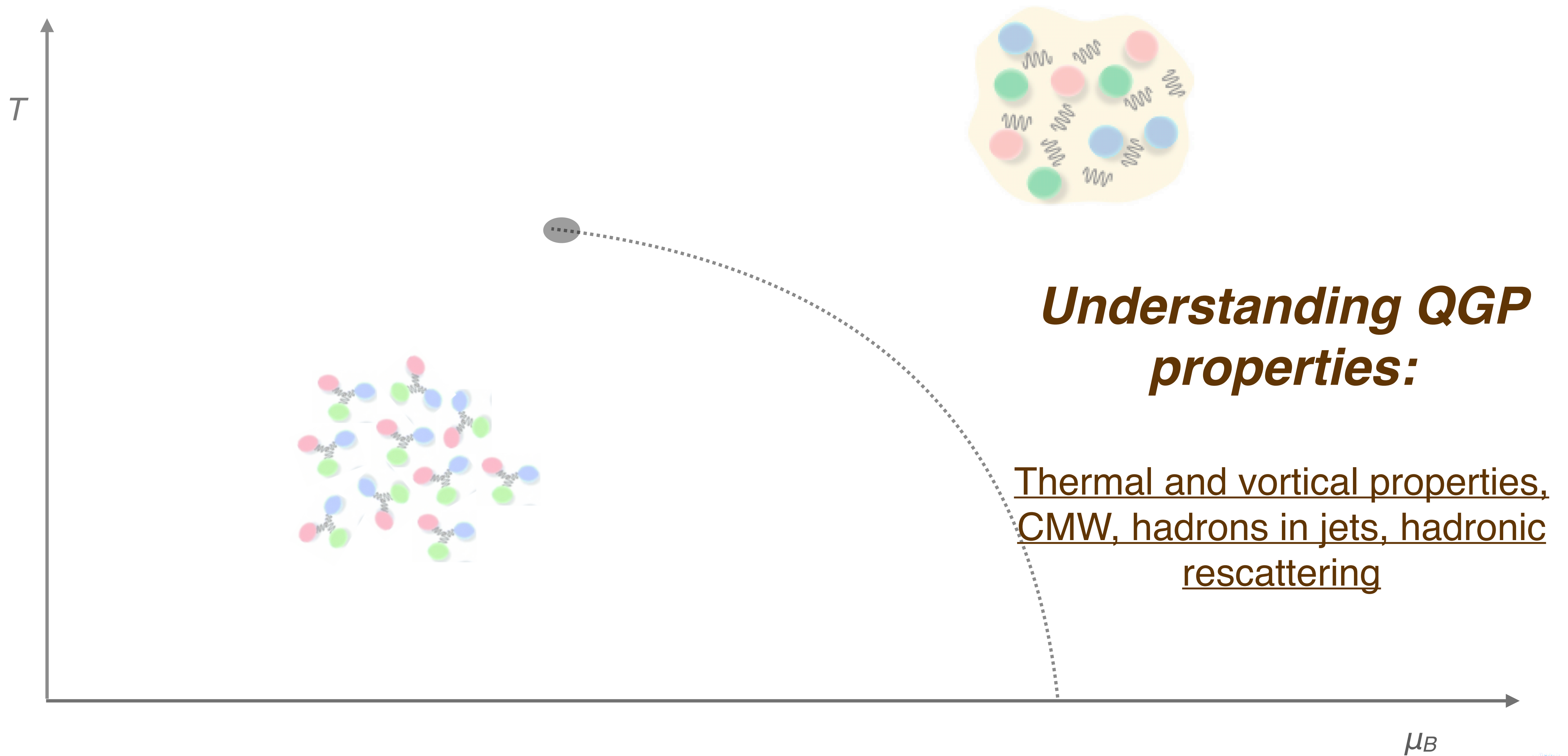
- Indication of high- p_T jet suppression in O+O collisions



Strangeness production in different systems

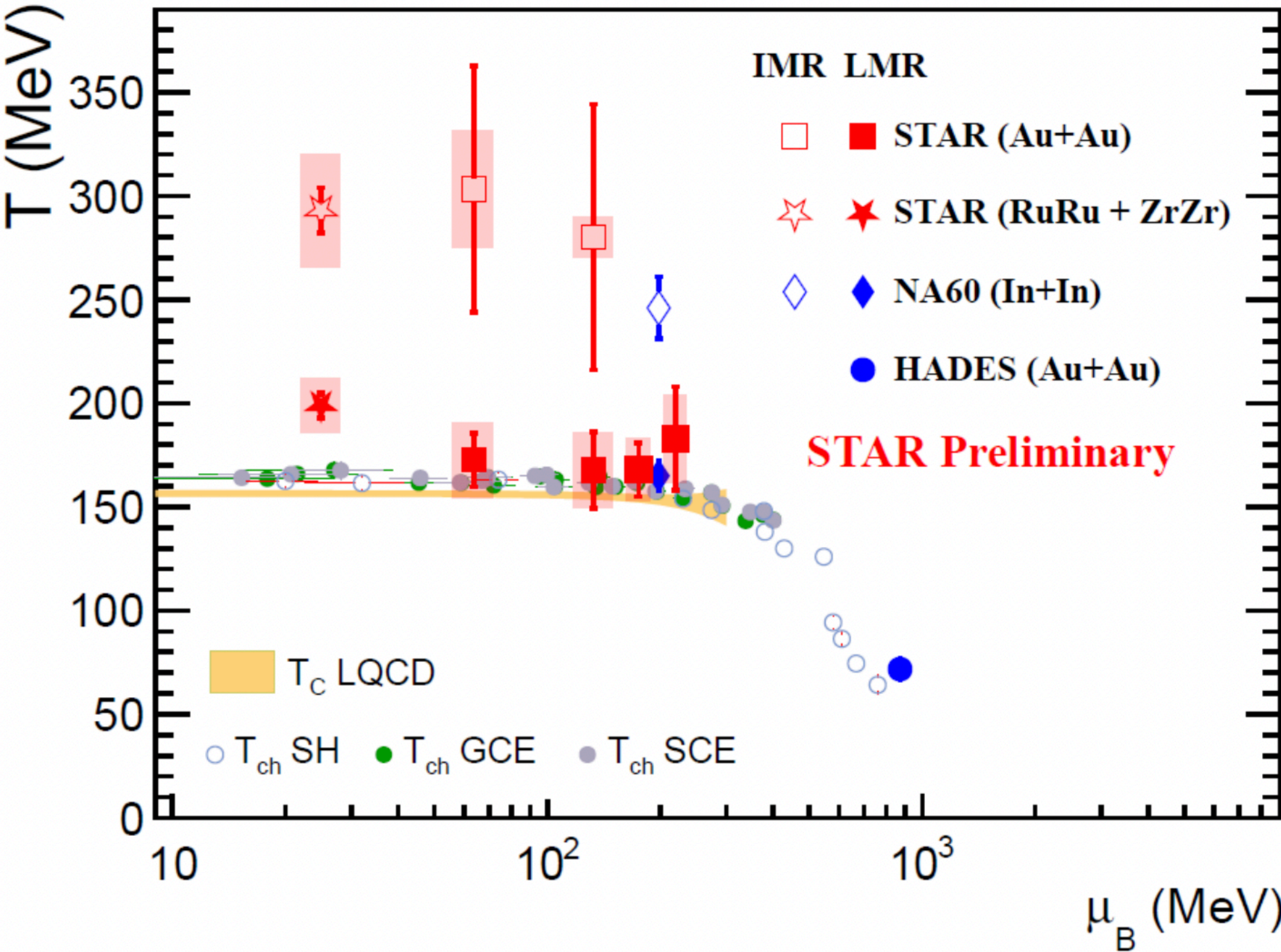
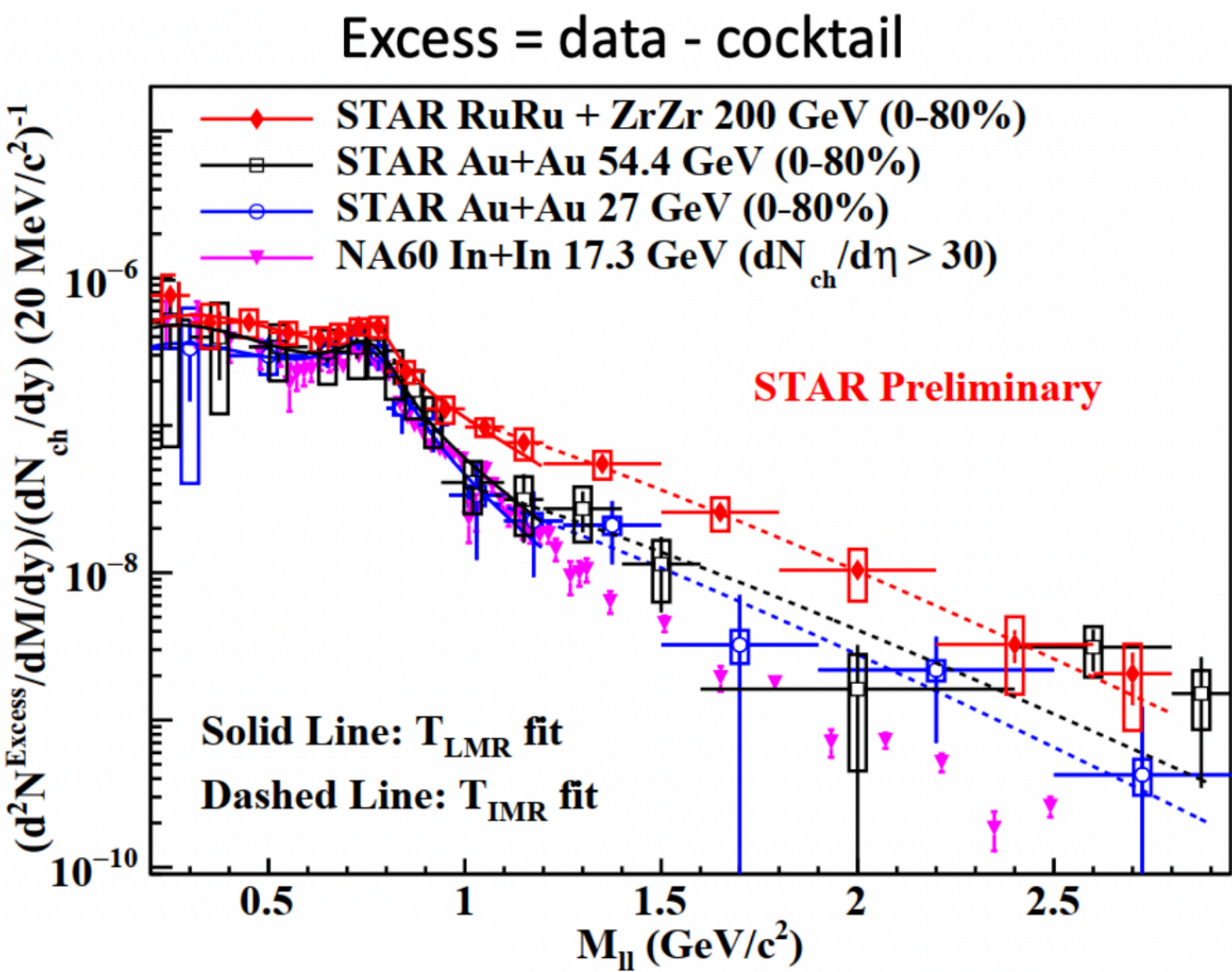


- Strangeness enhancement and baryon/meson enhancement in QGP
- Ω/ϕ yield ratio enhanced in both O+O and isobar collisions from peripheral to central collisions
- Enhancement similar in central O+O and similar multiplicity isobar collisions



Thermal dielectrons

IMR - dominated by QGP
thermal radiation
LMR - thermal radiation from
emission close to T_{pc}

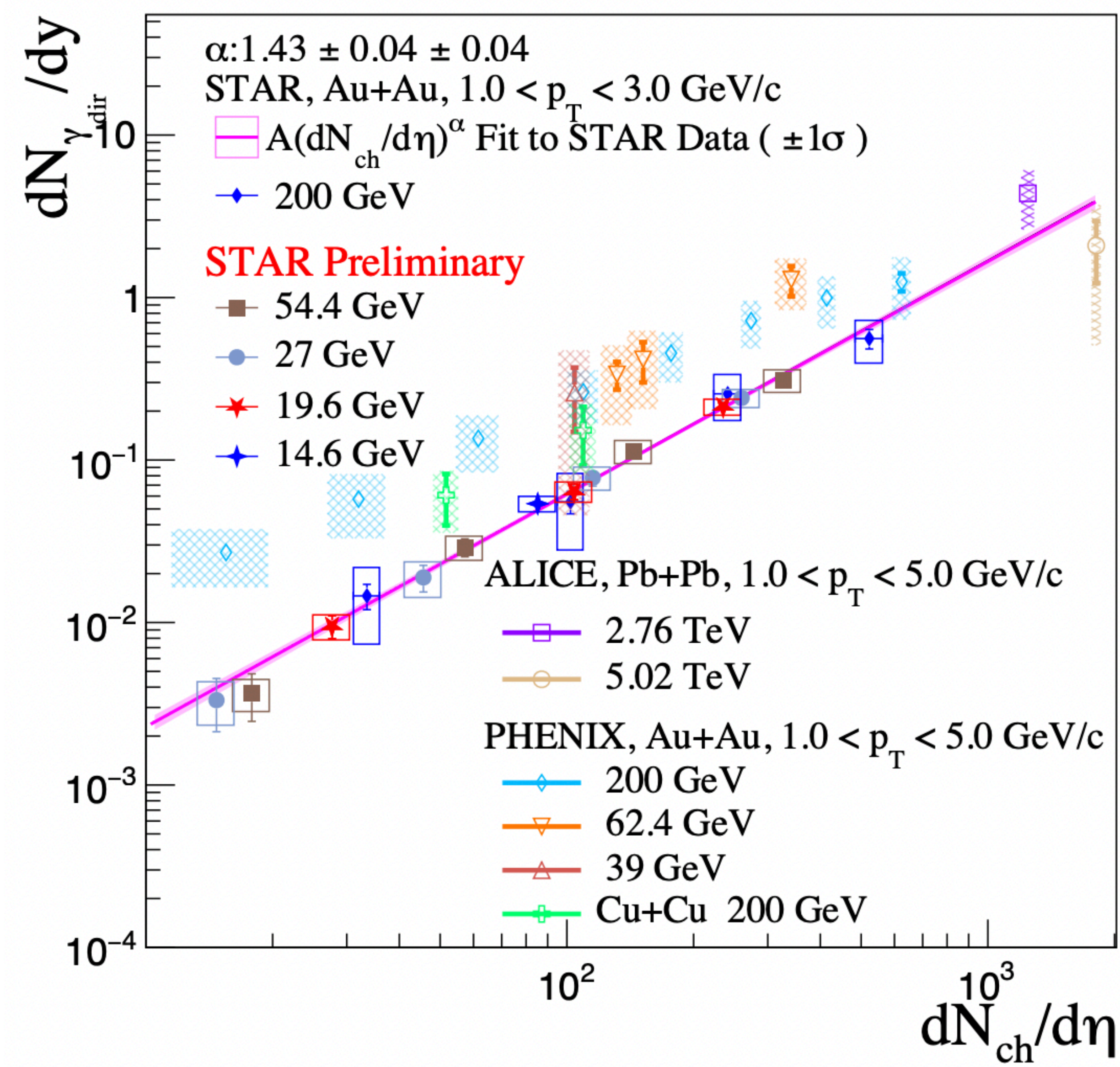


- $T_{IMR} > T_{LMR}$ (2.9σ higher in isobar)
- $T_{IMR} = 293 \pm 11$ (stat) ± 27 (sys) MeV (Isobar 200 GeV)
- T_{LMR} close to T_{pc} and T_{ch} in Au+Au data (14.6 — 54.4 GeV)
- T_{LMR} in isobar 200 GeV shows higher values than T_{pc} (199 ± 6 (stat) ± 13 (sys) MeV)

STAR 54.4, 27 GeV: [arXiv:2402.01998](https://arxiv.org/abs/2402.01998)



Direct virtual photons



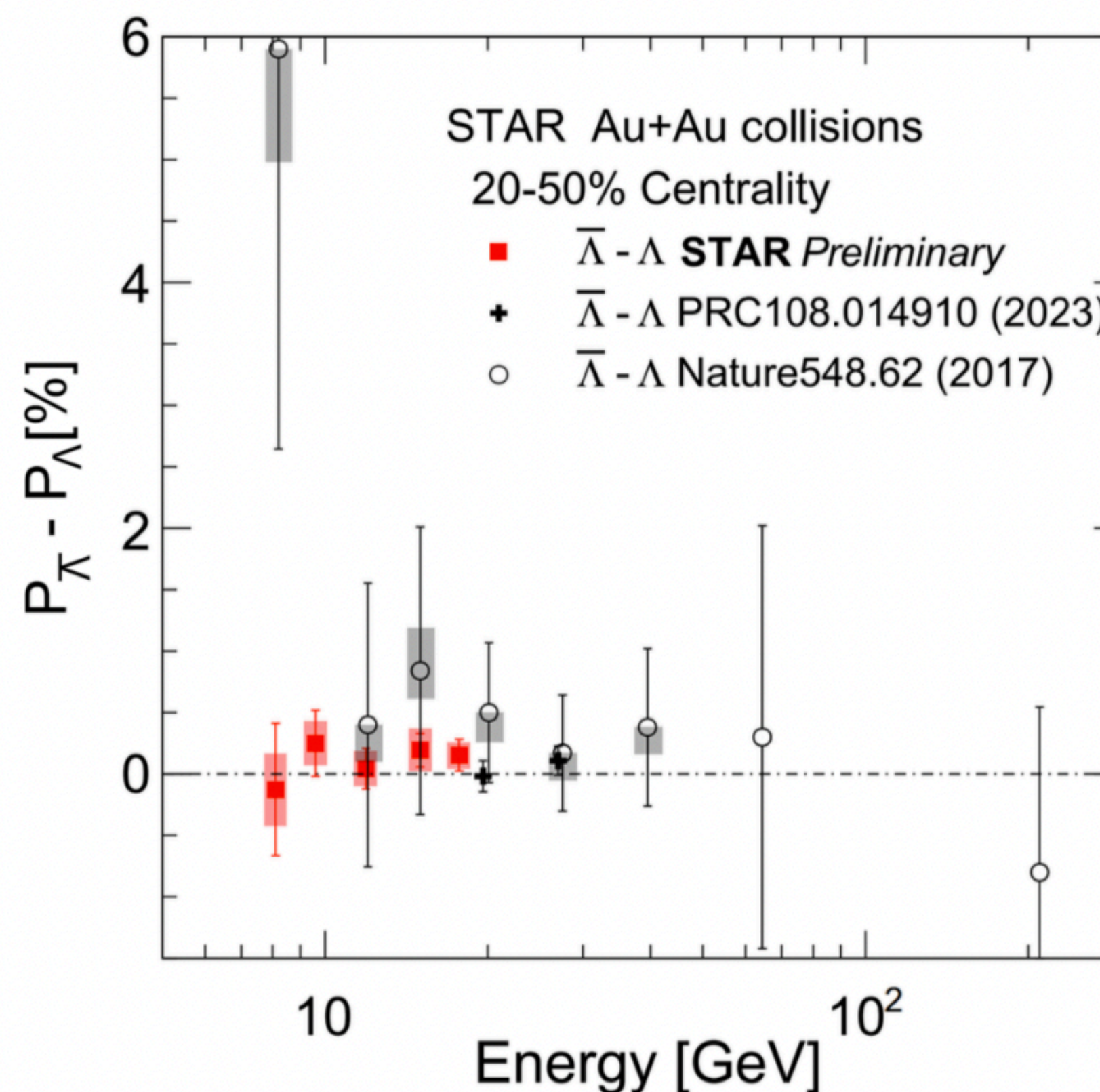
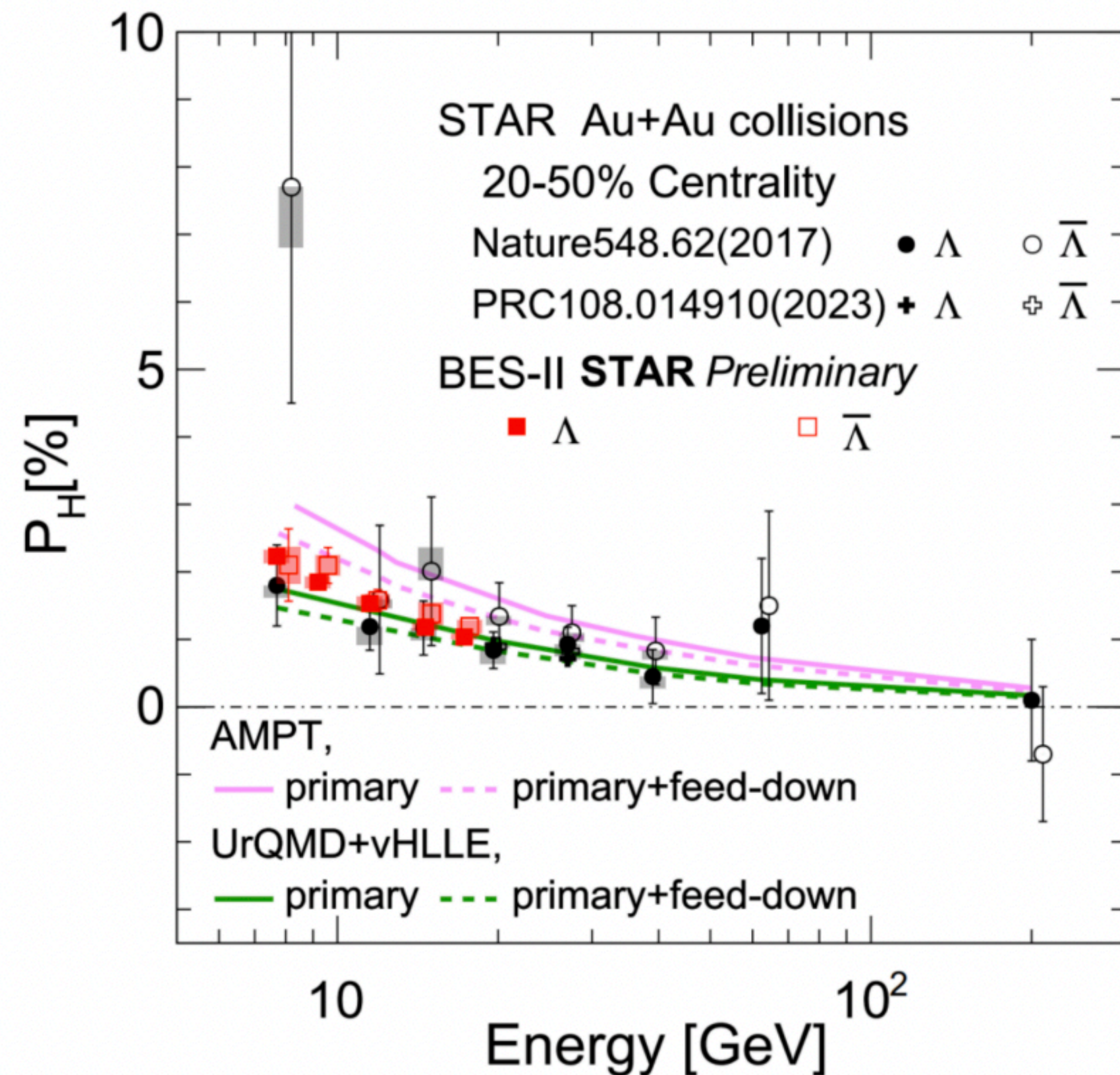
- Yield of direct photons vs. multiplicity from 14.6 to 200 GeV
- Common scale factor for yields from 14.6 to 200 GeV measurements by STAR

$\alpha = 1.43 \pm 0.04 \pm 0.04$



Λ polarization in BES-II

- Λ global polarization could probe impact of late stage B-field in heavy-ion collisions



- No splitting between Λ and $\bar{\Lambda}$ global polarization seen in BES-II measurements

$$(P_{\bar{\Lambda}} - P_{\Lambda}) \approx \frac{2|\mu_{\Lambda}|B}{T}$$

$$T = 150 \text{ MeV}$$

$$\mu_{\Lambda} = -1.93 \times 10^{-14} \text{ MeV/Tesla}$$

T - Temperature of emitting source
 μ_{Λ} - magnetic moment of Λ

- Estimated upper limit on late stage magnetic field: $B \lesssim 10^{13}$ Tesla (95% confidence level)

Also new measurements of non-zero Ξ and Ω polarization in BES-II energies

Poster by Tong Fu, #709

Poster by Qiang Hu, #932

Talk by Tan Lu, Mon, P1

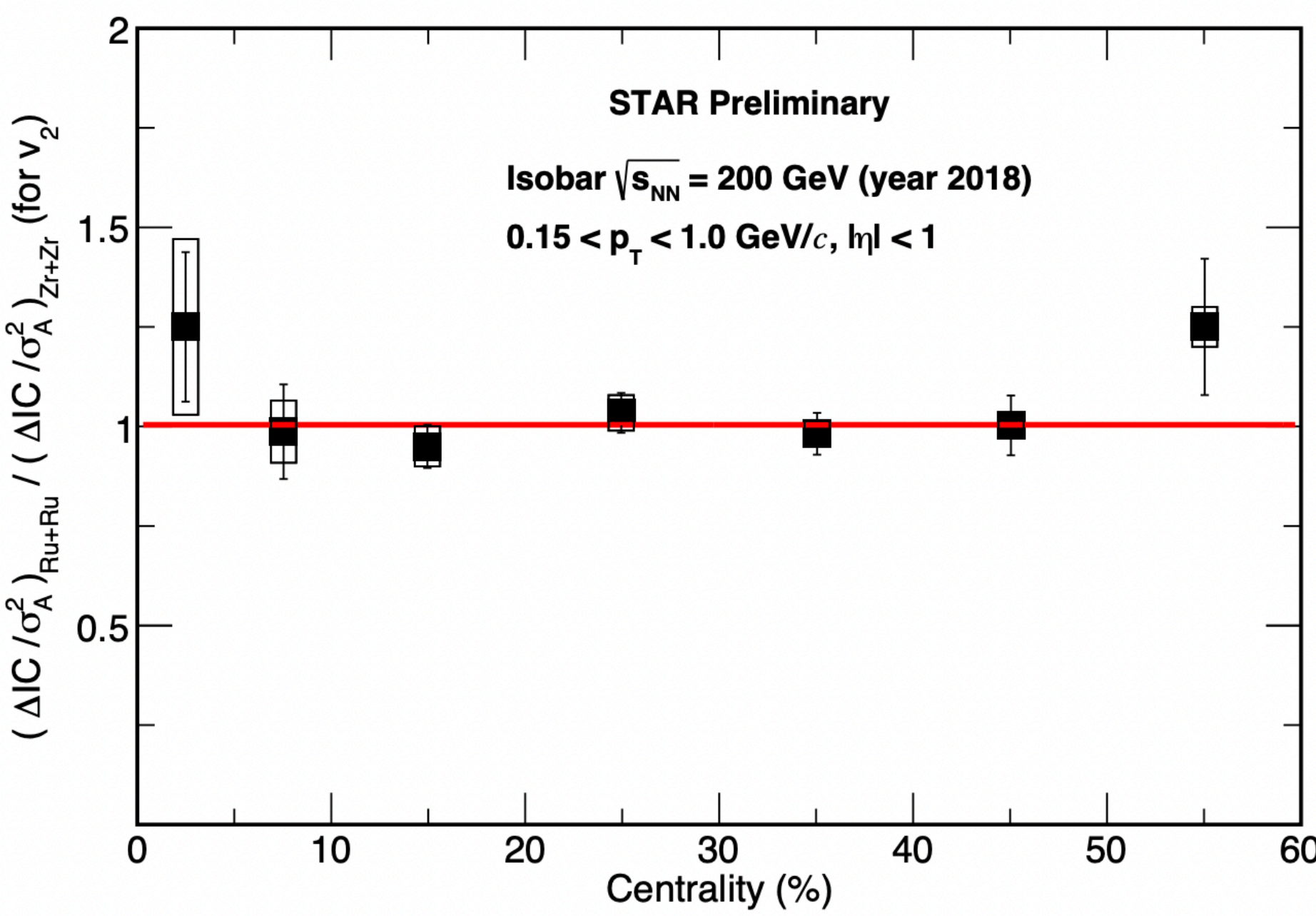
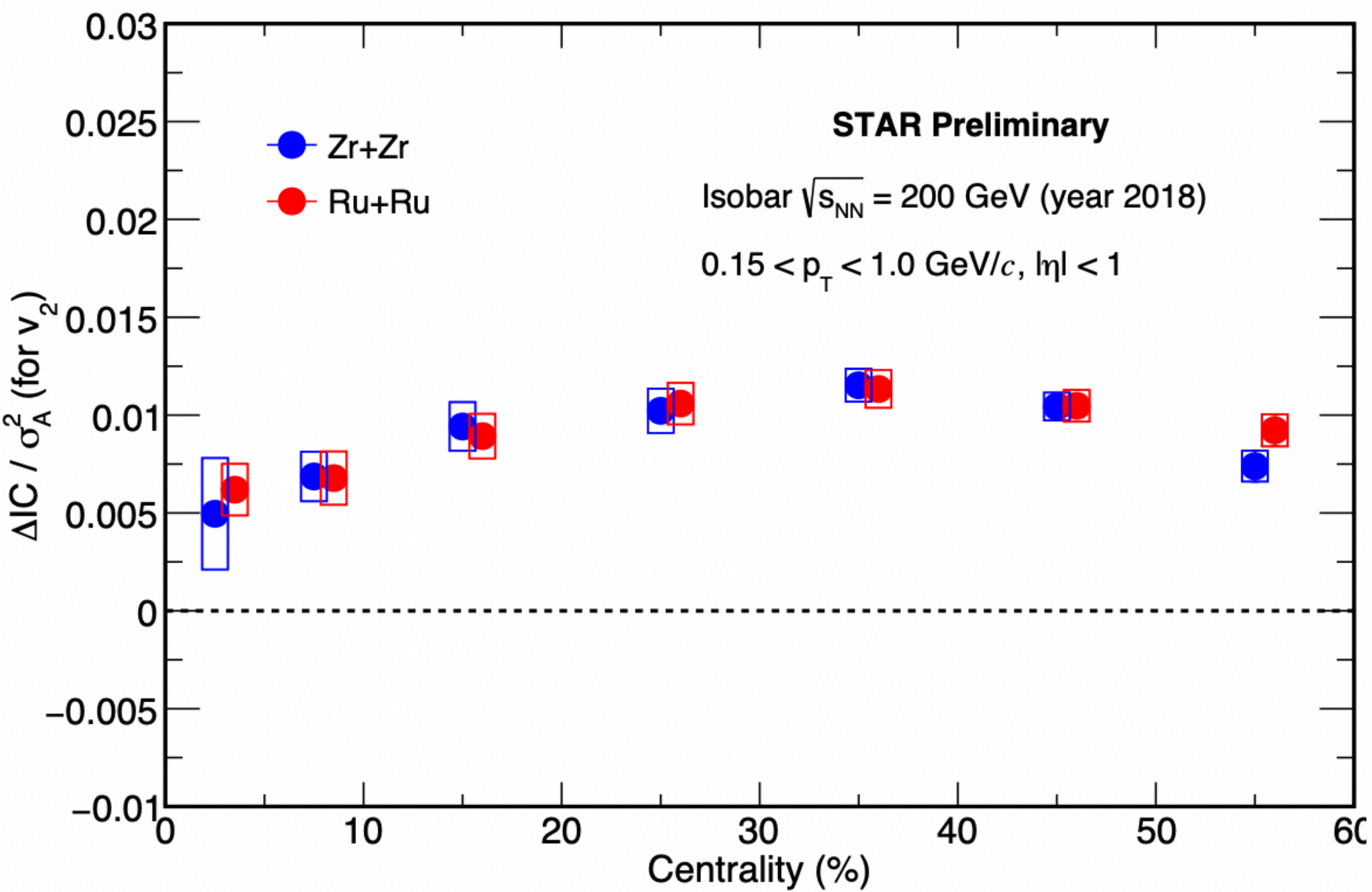
CMW search

- CME and Chiral Separation Effect can produce Chiral Magnetic Wave
- Creates charge dependent v_2

$$\Delta IC = (\langle v_2^- A_{ch} \rangle - \langle A_{ch} \rangle \langle v_2^- \rangle) - (\langle v_2^+ A_{ch} \rangle - \langle A_{ch} \rangle \langle v_2^+ \rangle)$$

$$A_{ch} = \frac{N_+ - N_-}{N_+ + N_-}$$

- Correlation of charge dependent v_2 with charge asymmetry
- Isobar collisions to test impact of B field



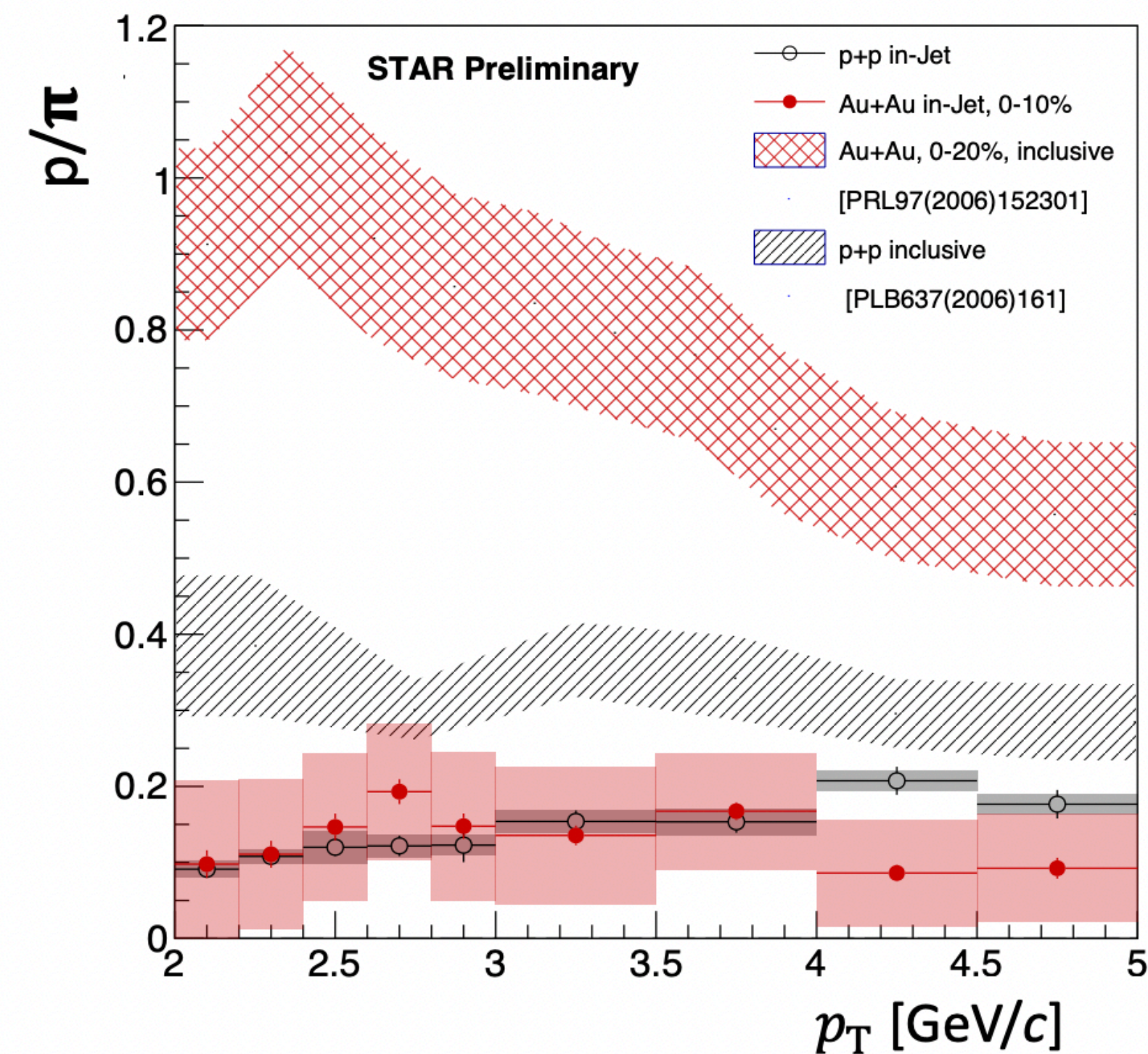
• Consistent values in the two isobar systems



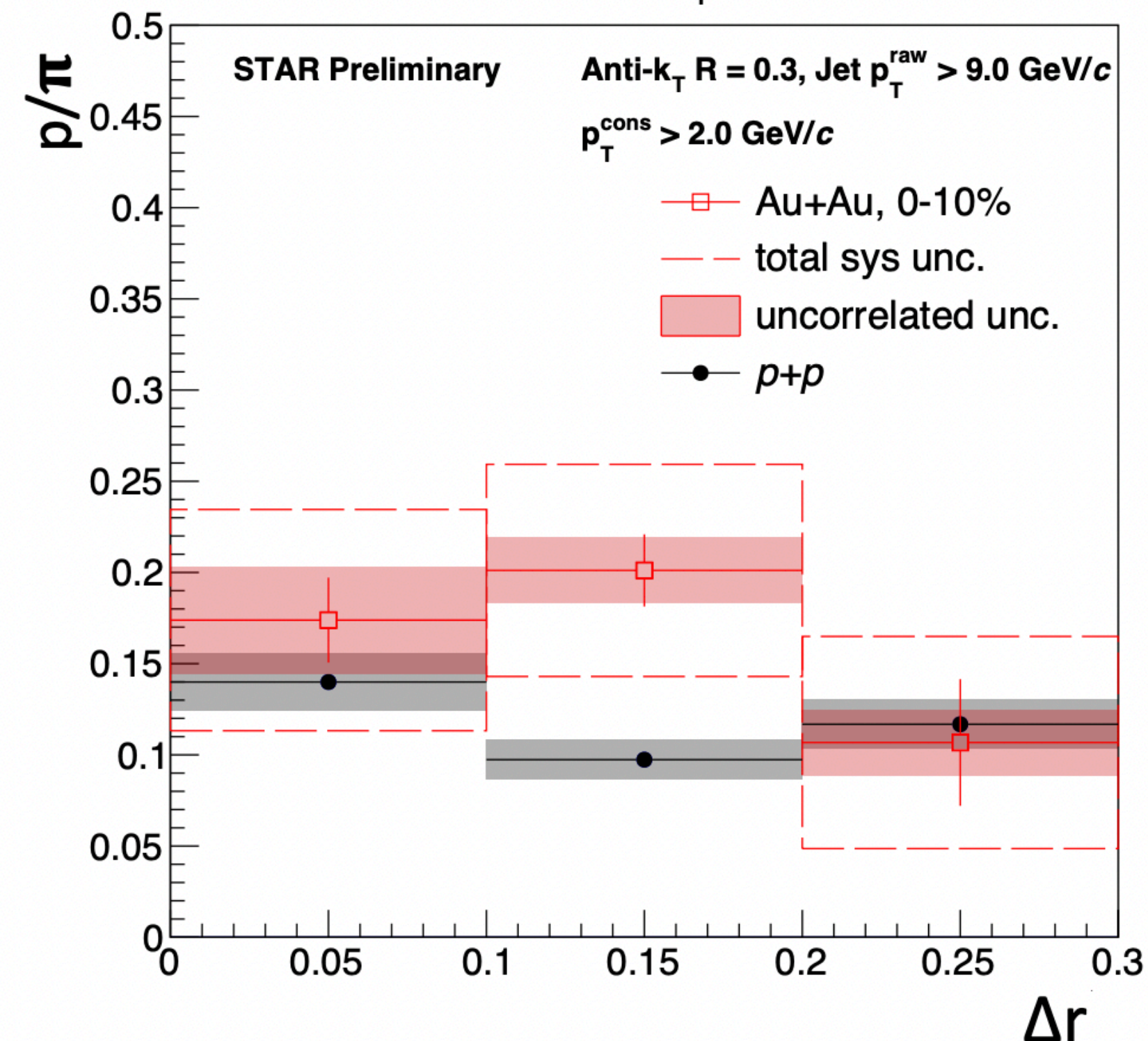
Baryon to meson ratio in jets

- Coalescence hadronization in QGP, inclusive baryon to meson ratios enhanced in A+A compared to p+p
- Is B/M ratio enhanced within jets in A+A?

$R = 0.3$, Jet $p_T^{\text{raw}} > 9 \text{ GeV}/c$, $p_T^{\text{cons}} > 2 \text{ GeV}/c$



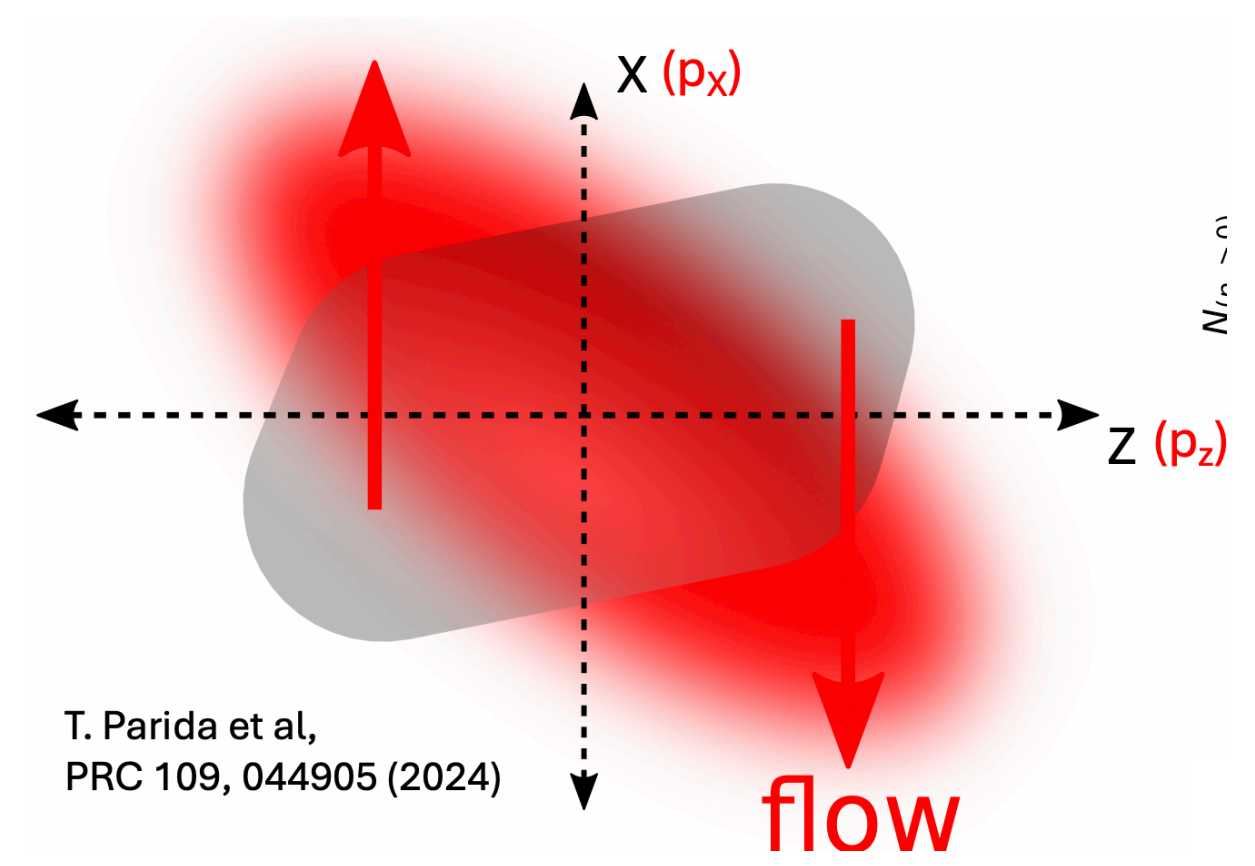
in-Jet Ratios, $2.0 < p_T^{\text{track}} < 3.0 \text{ GeV}/c$



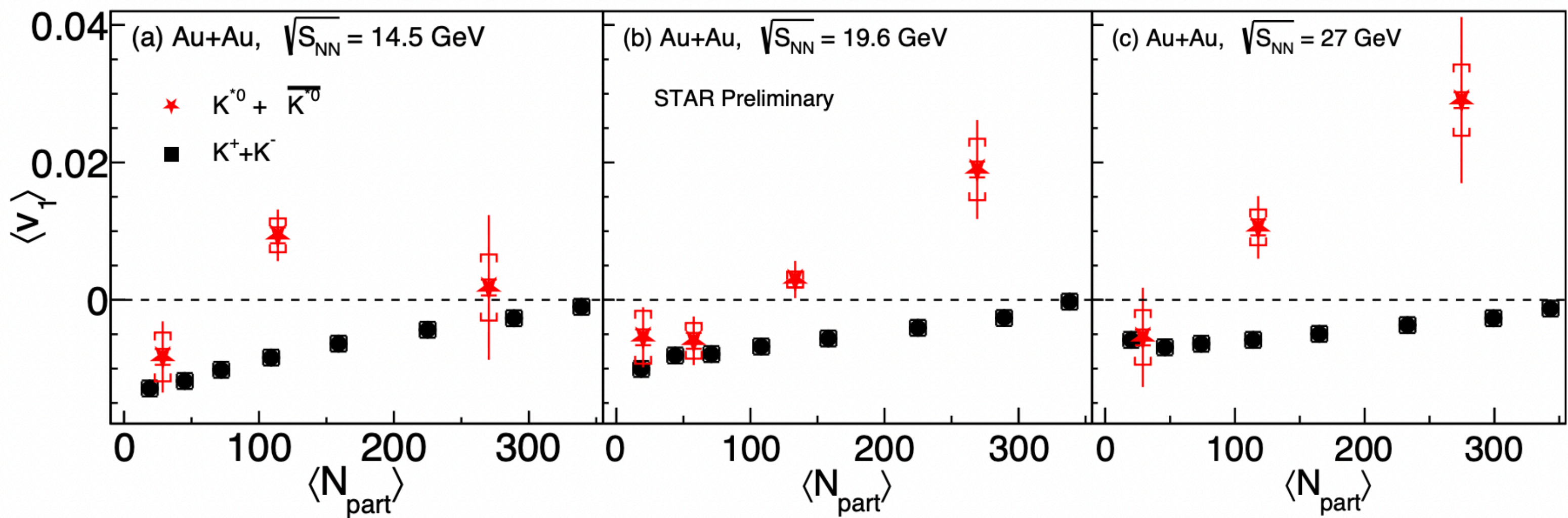
- For measured kinematics, no significant modification of p/π yield ratio within jets between p+p and Au+Au
- No significant difference in the in-cone radial evolution between p+p and Au+Au seen

Directed flow of K^{*0}

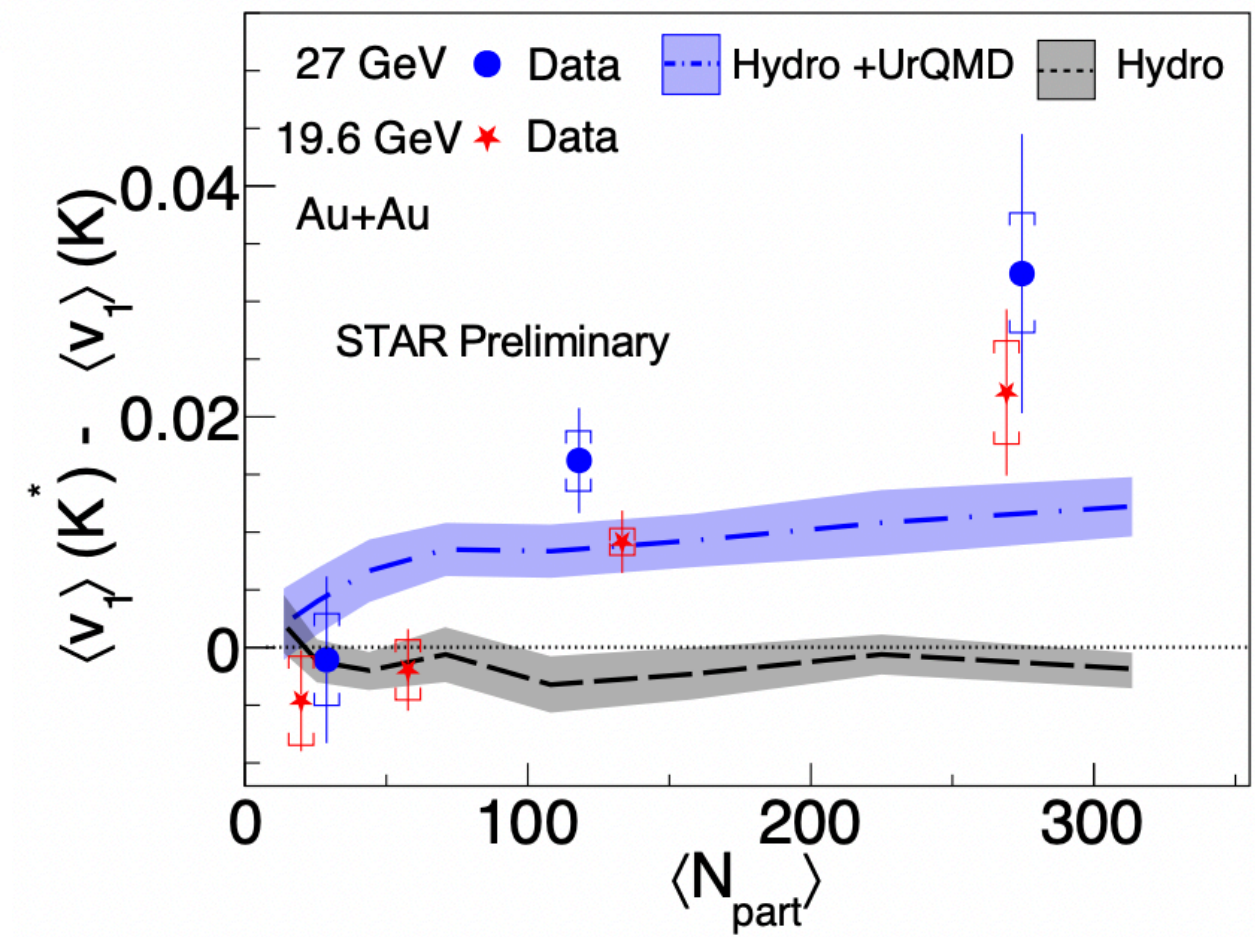
- K^{*0} suffers rescattering in the hadronic phase. An ideal probe to study hadronic interactions after freeze-out

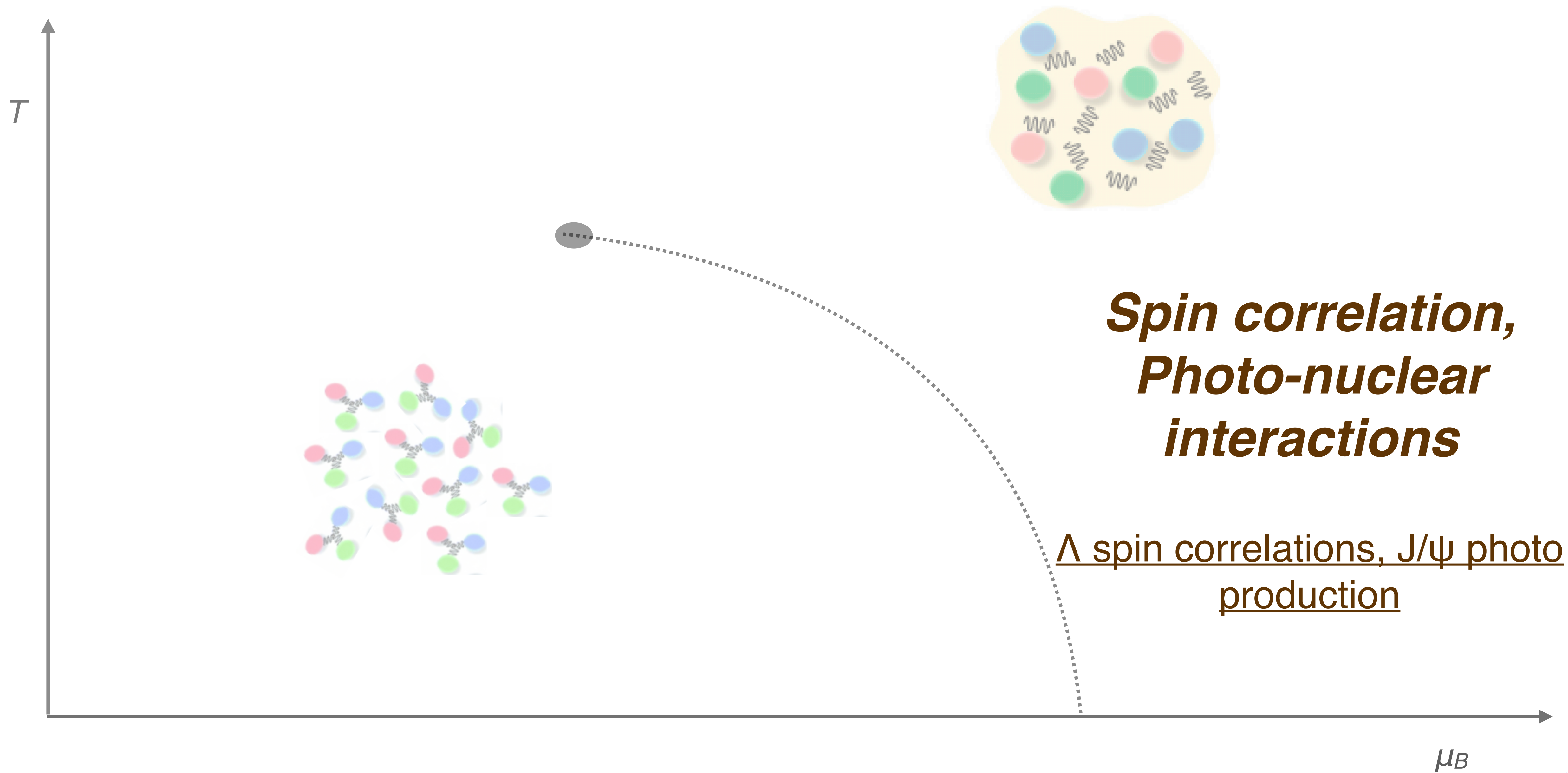


T. Parida et al,
PRC 109, 044905 (2024)



- Sign change in $K^{*0} v_1$ from peripheral to central $\rightarrow$ increase in hadronic rescattering
- Reproduced by calculations with hadronic rescattering





Λ pair spin correlation in $p+p$



- Possible source: maximally entangled s - $\bar{s}$ spin correlation of pairs from QCD vacuum

$$\frac{1}{N} \frac{dN}{d \cos(\theta^*)} = \frac{1}{2} [1 + \alpha_1 \alpha_2 P_{\Lambda_1 \Lambda_2} \cos(\theta^*)]$$

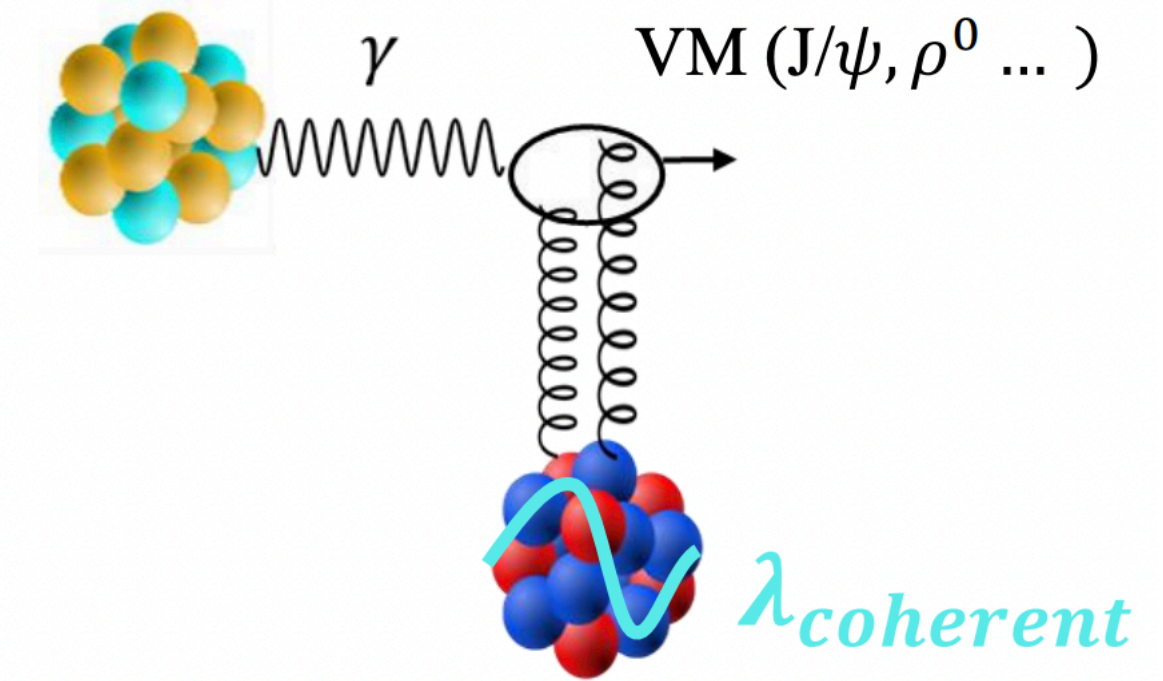
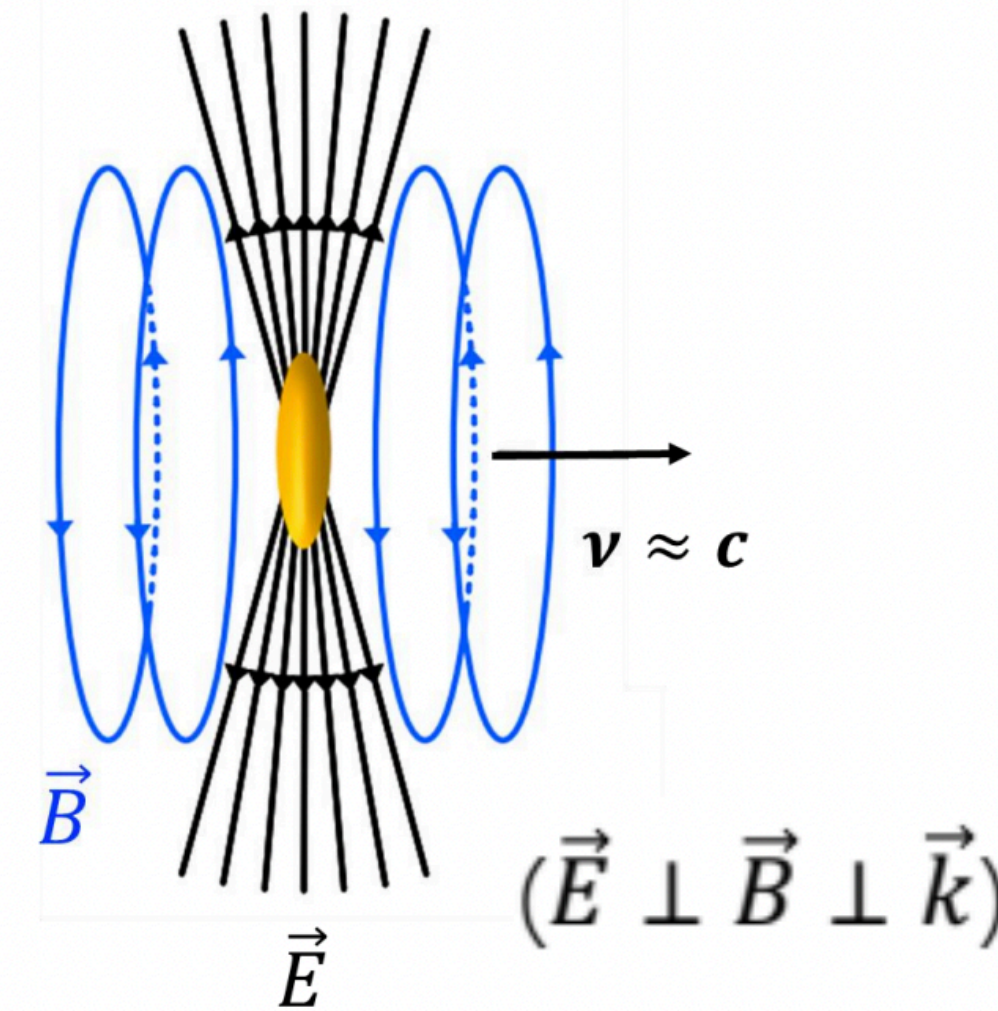
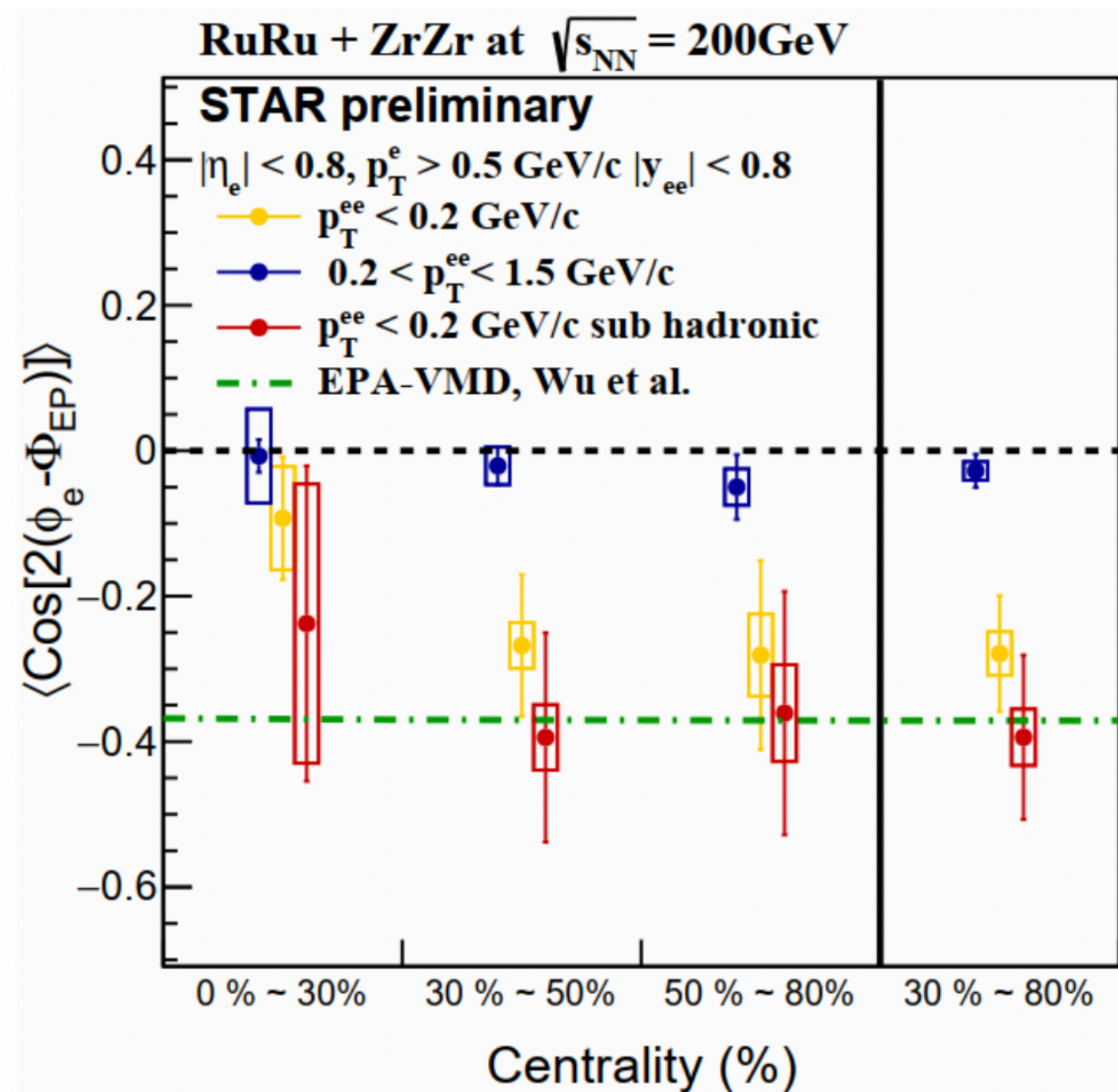
θ^* - difference between decay proton angles in rest frames of parent Λ

- Non-zero spin correlation for short range Λ - anti Λ pairs
- Correlation consistent with zero for long range pairs and other pairs
- PYTHIA consistent with zero for all pairs



Coherent J/ψ production and polarization

- J/ψ production in photo nuclear collisions
- Linearly polarized photons, along impact parameter direction



- Polarization of photo produced J/ψ , correlated with reaction plane (impact parameter direction)
- Could be used to access initial geometry in photon induced processes

Poster by Zengzhi Li, #923

Talk by Kaiyang Wang, Wed, P34



STAR: 25 years and beyond!



25 years of expanding the horizons on high energy nuclear physics research!

.... identifying Quark Gluon Plasma, measuring QGP temperature, detailed scan of QCD phase space ...

STAR: 25 years and beyond!

- Run 23 - 25: STAR forward upgrade (completed 2022), 5K DAQ rate
 - High statistics Au+Au, p+p data collection

STAR BUR 2025

$\sqrt{s_{NN}}$ (GeV)	Species	Number Events/ Sampled Luminosity	Year
200	Au+Au	8B+5B / $1.2 \text{ nb}^{-1} + 20.8 \text{ nb}^{-1}$	2023+2024+2025 (20 cryo-weeks)
200	Au+Au	8B+9B / $1.2 \text{ nb}^{-1} + 28.6 \text{ nb}^{-1}$	2023+2024+2025 (28 cryo-weeks)

Also 5 weeks of p+Au requested



25 years of expanding the horizons on high energy nuclear physics research!

More to come:

- Complete QCD phase scan from BES-II: EoS in different regions, search for 1st order phase boundary, map out Y-N, N-N interactions ...
- Run 22 - 25: Hard probes - improved kinematic reach , overlap with LHC, Forward physics and connections to EIC



STAR: 25 years and beyond!

Many thanks to RHIC operations for the successful data taking over the years, the strong support from BNL computing facilities (SDCC) and NERSC at LBNL, and the highly successful international collaboration in STAR's journey in completing its science mission!



25 years of expanding the horizons on high energy nuclear physics research!

More to come:

- Complete QCD phase scan from BES-II: EoS in different regions, search for 1st order phase boundary, map out Y-N, N-N interactions ...
- Run 22 - 25: Hard probes - improved kinematic reach , overlap with LHC, Forward physics and connections to EIC

STAR - list of talks at QM2025

No	ID	Title	Speker	Session
1	1133	Search for the Chiral Magnetic Wave at STAR with Isobar and Au+Au collisions	Ankita Singh Nain	P11 - 04/08
2	1131	Measurements of global and local spin polarization of hyperons in Au+Au collisions at RHIC-STAR	Tan Lu	P1 - 04/07
3	865	Measurement of $\Lambda \bar{\Lambda}$ spin correlation in proton-proton collisions at STAR	Jan Vanek	P1 - 04/07
4	785	Measurement of Anisotropic Flow for BES-II Energies at RHIC-STAR	Sharang Rav Sharma	P31 - 04/09
5	822	Constraining the small system collectivity using d+Au and O+O collisions at $\sqrt{s_{NN}} = 200$ GeV from STAR	Zhengxi Yan	P1 - 04/07
6	788	Measurement of directed flow of K^0 and ϕ Resonances in Au+Au collisions at RHIC BES energies	Md. Nasim	P12 - 04/08
7	869	Residual 3rd-body Coulomb Effect on Identical Charged Pion Correlations	Vinh Luong	P32 - 04/09
8	764	Measurements of Light Nuclei (d, t, 3He) and Lambda correlation in Au+Au collisions at $\sqrt{s_{NN}}=3$ GeV from STAR	Xialei Jiang	P32 - 04/09
9	763	Search for the Strange Dibaryons with Baryon Correlations in Isobar Collisions at STAR	Kehao Zhang	P21 - 04/08
10	1134	Strange, Non-strange and Multi-strange Hadron Production in Au+Au Collisions from STAR Fixed-Target Experiment	Hongcan Li	P23 - 04/08
11	806	Strangeness production in different collision systems and at different collision energies with the STAR experiment	Weiguang Yuan	P29 - 04/09
12	1132	New Hypernuclei Measurements from STAR	Yingjie Zhou	P29 - 04/09
13	918	Thermal dielectron measurements with the STAR experiment	Jiaxuan Luo	P33 - 04/09
14	912	Imaging shapes of atomic nuclei in high-energy nuclear collisions at STAR experiment	Chunjiang Zhang	P22 - 04/08
15	818	Direct virtual photon measurements in Au+Au collisions with STAR BES-II data	Xianwen Bao	P26 - 04/09
16	801	Measurements of Baryon-to-Meson Ratios Inside Jets in Au+Au and p+p Collisions at $\sqrt{s_{NN}} = 200$ GeV at STAR	Gabe Del Gau	P18 - 04/08
17	921	Studies of jet quenching in O+O collisions at $\sqrt{s_{NN}} = 200$ GeV by STAR	Sijie Zhang	P18 - 04/08
18	807	Photon-induced J/ψ production and polarization effects in isobar collisions at STAR	Kaiyang Wang	P34 - 04/09
19	872	Proton High-order Cumulants Results from the STAR Fixed-Target Program	Zachary Sweger	P35 - 04/09
20	770	Baryon-Strangeness Correlations in Au+Au Collisions at RHIC-STAR	Hanwen Feng	P30 - 04/09
21	768	Precision Measurement of Kinematic Range Scan of Fluctuations of (Net-)proton Multiplicity Distributions in Au+Au Collisions	Yige Huang	P30 - 04/09



STAR - list of posters at QM2025

No.	ID	Title	Presenter
1	829	phi-meson Local, Global, and Helicity Frame Spin Alignment at STAR	CW Robertson
2	699	Beam Energy Dependence of Directed Flow of pions and Kaons in Au+Au Collisions from STAR	Ze Qiu
3	696	Measurement of phi meson directed flow in $\sqrt{s_{NN}} = 3 - 19.6$ GeV Au+Au collisions from RHIC-STAR	Guangyu Zheng
4	682	Probing the QCD Phase Structure with Elliptic Flow in Au+Au Collisions at 3.0-19.6 GeV at RHIC	Guoping Wang
5	692	Measurements of elliptic and triangular flow in forward and backward rapidity in Au+Au collisions at $\sqrt{s_{NN}} = 19.6$ GeV at RHIC-STAR	Moe Isshiki
6	686	Triangular flow in Au + Au collisions at $\sqrt{s_{NN}} = 17.3$ GeV from RHIC-STAR	Yuli Kong
7	896	Beam Energy Dependence of Baryon Directed Flow (v_1) in Au + Au Collision at RHIC-STAR	Zhuo Wang
8	886	Exploring Electromagnetic-field Effects using Charge-Dependent Directed Flow from BES-II Data at STAR	Aditya Prasad Dash
9	917	Light- and Hyper-Nuclei Collectivity in $\sqrt{s_{NN}} = 3.0 - 4.5$ GeV Au+Au Collisions at RHIC-STAR	Junyi Han
10	1055	The non-linear response coefficient $\chi_{4,22}$ in Au+Au and U+U collisions	Jie Zhao
11	899	Using an Innovative Event Shape Selection Method to Search for the Chiral Magnetic Effect with RHIC BES-II data at STAR	Yunshan Cheng
12	932	Measurements of $\Lambda(\bar{\Lambda})$ hyperons' local spin polarization in Au+Au collisions from the RHIC Beam Energy Scan-II	Qiang Hu
13	709	Measurement of global polarization of Λ and $\bar{\Lambda}$ in Au+Au collisions from the RHIC Beam Energy Scan-II	Tong Fu
14	708	Measurements of $\Xi^{\pm}$ and $\Omega^{\pm}$ Hyperons Global Polarization in Au+Au collisions at BES-II energies from RHIC-STAR	Xingrui Gou
15	1104	First Measurements of Hyper-Nucleus $^3_{\Lambda}H$ Global Polarization in Au+Au collisions at STAR	Chenlu Hu
16	910	Probing Electromagnetic-field Effects and Coalescence Dynamics using Directed and Elliptic Flow of Identified Particles at STAR	Xiatong Wu
17	690	Measurement of system size dependence of directed flow of protons (anti-protons) at RHIC	Muhammad Farhan Taseer
18	1103	Collision energy dependence of mean transverse momentum fluctuations in Au+Au collisions at STAR	Yining Gao



STAR list of posters at QM2025

19	1020	Baryon-strangeness Correlation in Au+Au Collisions at $\sqrt{s_{NN}} = 3$ GeV by STAR Fixed-target exp	Yu Zhang
20	821	Rapidity Dependence of Proton Higher-Order Cumulants in $\sqrt{s_{NN}} = 3.5, 3.9$ Au+Au Collisions	Yongcong Xu
21	669	Measurements of Λ - Λ Correlation Function in Au+Au Collisions at $\sqrt{s_{NN}} = 3$ GeV	Ke Mi
22	767	Pion femtoscopy with Lévy sources in Au+Au collisions at STAR	Mate Csanad
23	902	Rapidity Dependence of Proton Higher-Order Cumulants in $\sqrt{s_{NN}} = 3.2, 3.5$ and 3.9 GeV Au+Au Collisions	Xin Zhang
24	901	Precision Measurement of (Net-)proton Number Fluctuations in Au+Au Collisions at RHIC	Fan Si
25	774	Dynamical transverse momentum fluctuations at high baryon density measured by the STAR exp	Rutik Manikandhan
26	771	Precision measurement of 5th and 6th order cumulants and factorial cumulants of (net-)proton multiplicity distributions in Au+Au Collisions from BES-II	Bappaditya Mondal
27	711	Production of Proton and Light Nuclei in Au+Au Collisions by RHIC-STAR in the High Baryon Density Region	Liubing Chen
28	815	Probing isospin violation under strong B-fields via production of $K^{*0,\pm}$ mesons in Au+Au, Ru+Ru, Zr+Zr, O+O and p+p collisions at RHIC	Subhash Singha
29	983	Production of Λ^3_H and Λ^4_H in Au+Au collisions at $\sqrt{s_{NN}} = 3.2, 3.5, 3.9$ and 4.5 GeV at STAR	Yuanjing Ji
30	832	K^{*0} meson production in Au+Au collisions at high baryon densities from STAR BES-II experiments	Ziyue Xiang
31	816	Production of light nuclei in Au+Au collisions with the STAR BES-II program	Yixuan Jin
32	812	System size dependence of strange hadron production at $\sqrt{s_{NN}} = 200$ GeV at STAR	Xiongxiang Xu
33	700	Thermal dielectron production in Au+Au collisions at 17.3 GeV at STAR	Ziyang Li
34	666	Thermal dielectron measurements in Au+Au collisions at BES-II energies with the STAR experiment	Chenliang Jin
35	846	Measurements of thermal dielectron production in isobar collisions at $\sqrt{s_{NN}} = 200$ GeV with STAR	Jiaxuan Luo
36	923	Probing gluon structure with J/ψ photoproduction in isobaric ultra-peripheral collisions at 200 GeV with the STAR	Zengzhi Li
37	811	Investigating Entanglement Enabled Spin Interference in continuum $\pi^+ \pi^-$ and ρ^0 photoproduction in Au+Au collisions at STAR	Sam Corey



STAR list of posters at QM2025

38	920	Measurements of proton-antiproton pairs from QED vacuum excitation in Au+Au ultra-peripheral collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV from STAR	Xin Wu
39	1019	First Measurement of Photoproduction of ϕ Mesons in Ultra-Peripheral Au+Au Collisions at $\sqrt{s_{\rm{NN}}} = 200\sim\mathrm{GeV}$ at STAR	Xihe Han
40	808	Measurement of dielectron production in Au+Au and U+U ultraperipheral collisions at STAR	Nicholas Jindal
41	844	Coulomb Dissociation Measurements in Isobaric Collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV with the STAR Experiment	Huda Nasrulloh
42	928	Investigating quantum interference in Drell-S $\ddot{o}$ ding process in Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV at STAR	Xinbai Li
43	673	Study of Entanglement Enabled Spin Interference in peripheral Au+Au collisions with coherently photoproduced rho mesons in the STAR experiment	Leszek Kosarzewski
44	924	Measurement of heavy-flavor electron production in Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 54.4$ GeV at STAR	Veronika Prozorova
45	803	Measurement of J/ψ energy correlator in p+p collisions at $\sqrt{s}=500$ GeV at STAR	Dandan Shen
46	938	Measurement of D^0 Meson-Tagged Jet Generalized Angularities in Au+Au Collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV at STAR	Ondrej Lomicky
47	705	Measurement of the Υ meson production in $p+p$ collisions at $\sqrt{s} = 510$ GeV at the STAR experiment	Jakub Ceska
48	799	Generalized angularities of heavy flavor and inclusive jets in Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV at STAR	Tanmay Pani
49	797	Observation of medium-induced acoplanarity using gamma and π^0 -triggered semi-inclusive recoil jet distributions in central Au+Au and p+p collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV by STAR	Nihar Sahoo
50	796	Studying path-length dependent energy loss using jet v_1 and event shape engineered high momentum probes in heavy-ion collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV by STAR	Isaac Mooney
51	1090	Measurement of photon-jet correlations in p+p and central Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV by STAR	Jace Tyler
52	722	Semi-inclusive hadron+jet measurement in Ru+Ru and Zr+Zr collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV in STAR	Yang He
53	794	Measurement of inclusive jet production in Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 200$ GeV	Michal Svoboda
54	1053	Search for Collectivity in Photo-nuclear Processes at RHIC using STAR Detector	Souvik Paul
55	725	Directed flow of He4L and He5L in Au+Au collisions at $\sqrt{s_{\rm{NN}}} = 3.0$ GeV	Junyi Han

