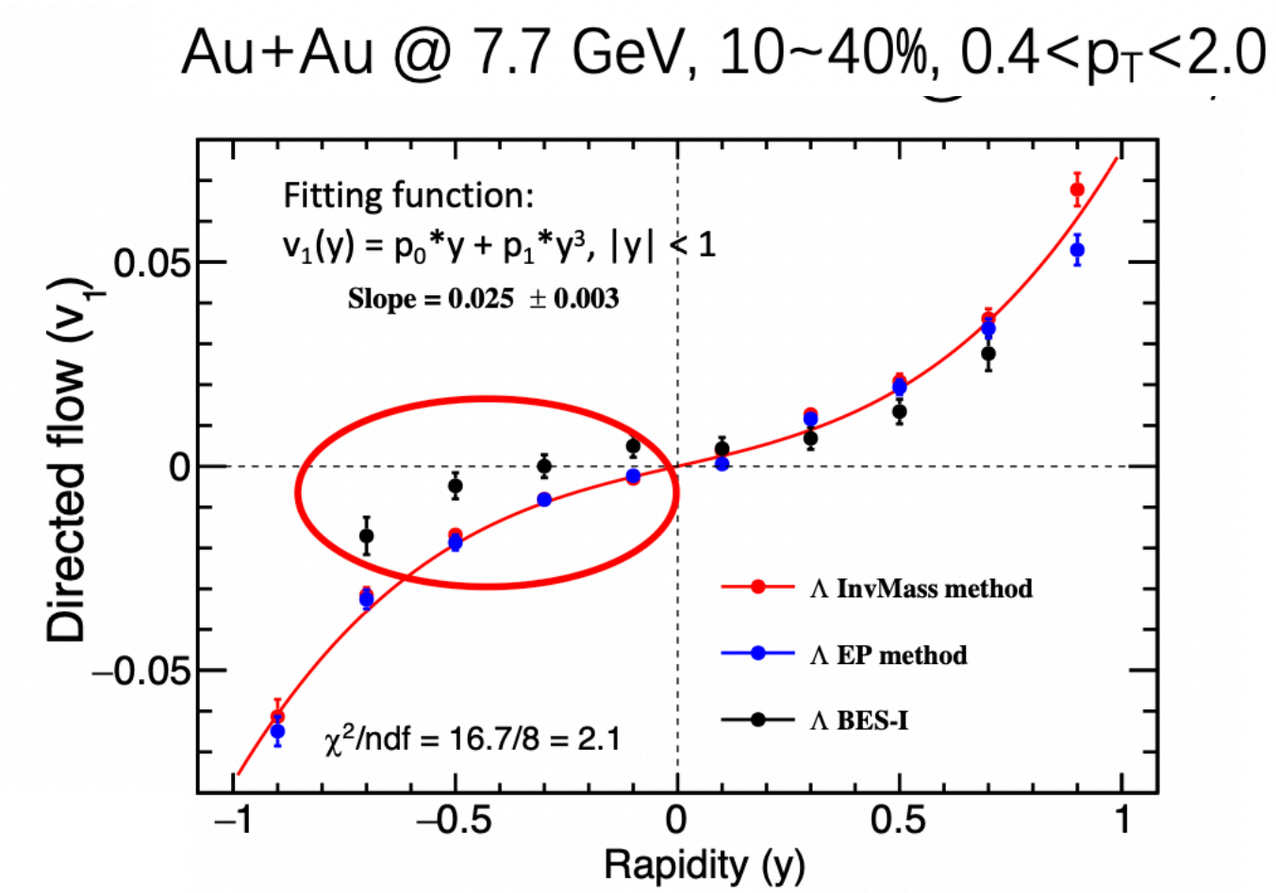
FXT Flow analysis - Status/Plans

July 03, 2023

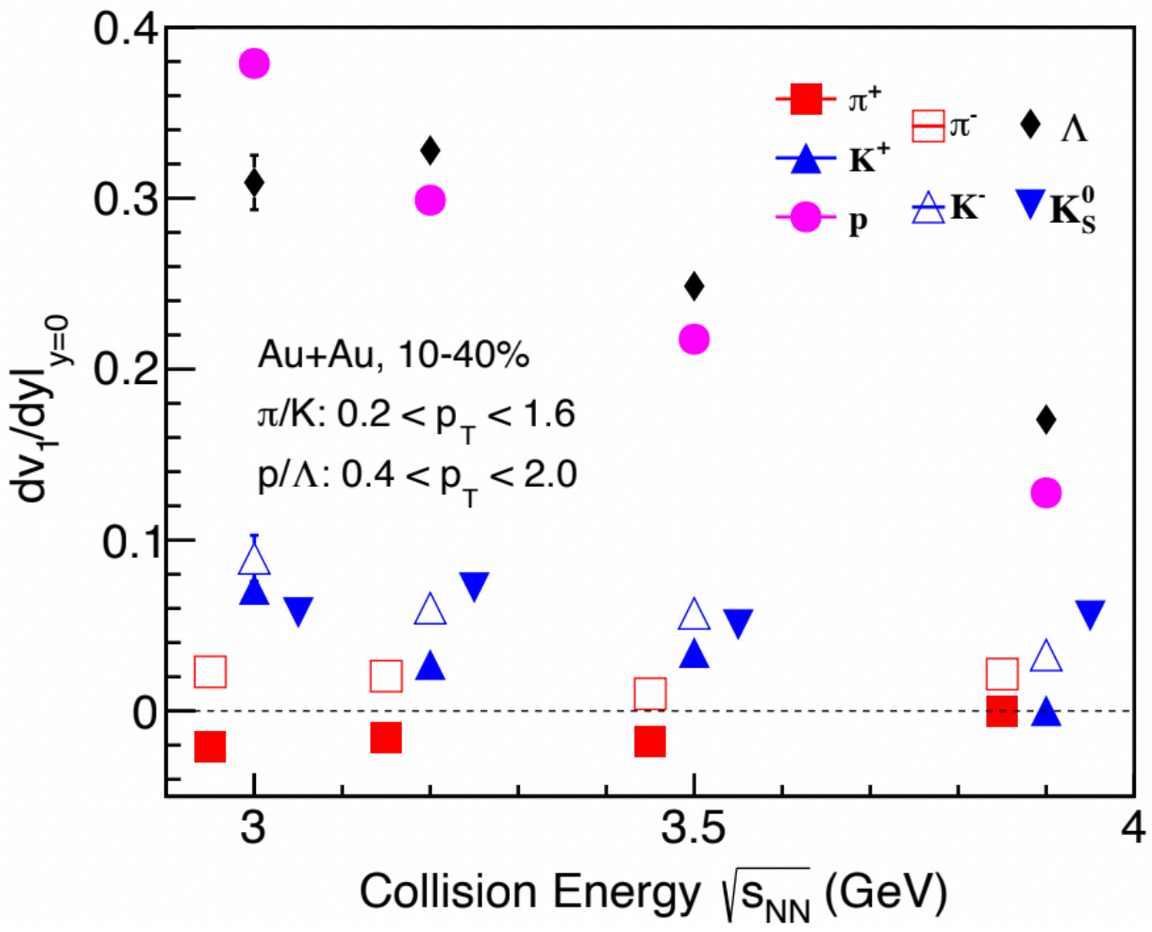
Sooraj Radhakrishnan
Kent State University/Lawrence Berkeley National Laboratory

1. Consistency between BES-I and BES-II



- Some discrepancy between BES-I and BES-II results
- How about other energies and slopes? Are the fit functions and range used same? Can we make a compilation of BES-I BES-II comparison?
- Can we reanalyze Lambda for 7.7 GeV from BES-I? The difference is quite significant

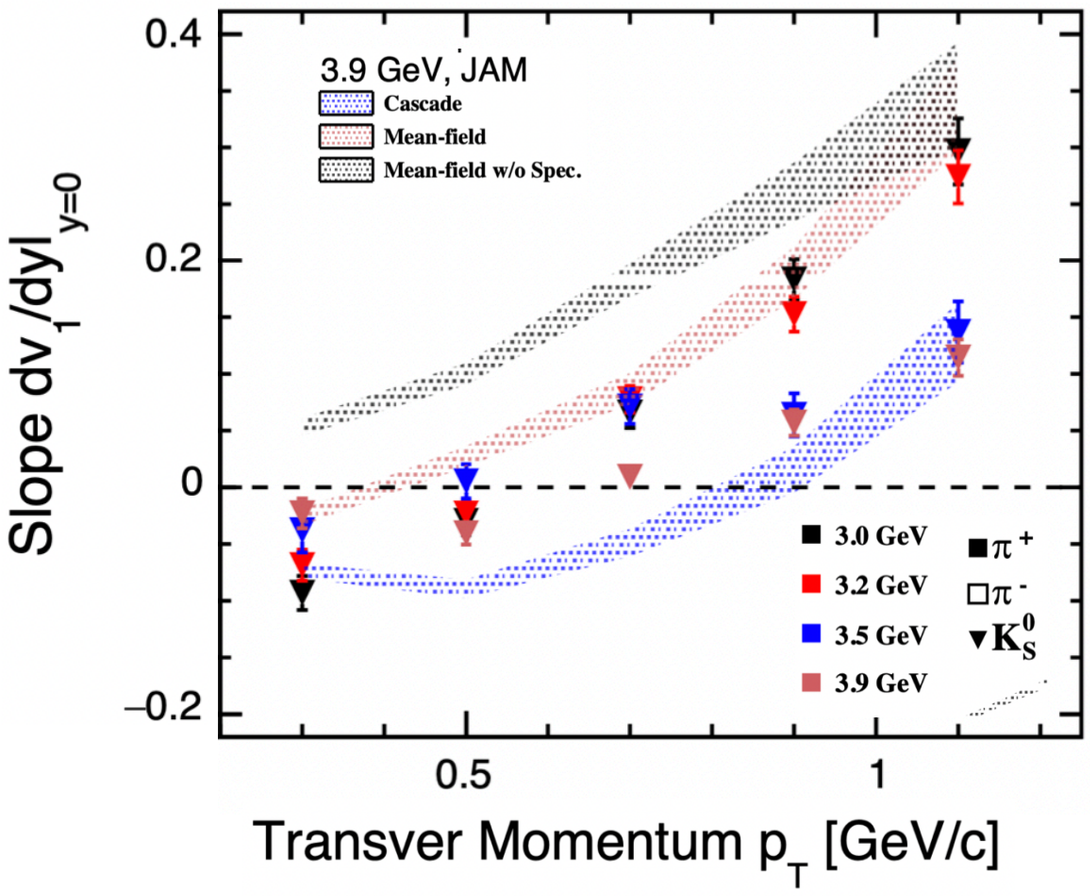
2. Λ v_1 vs energy and consistency between methods



Note: v_1 measurement is based on EP method for all particles. The difference between inv. mass and EP methods is under investigation.

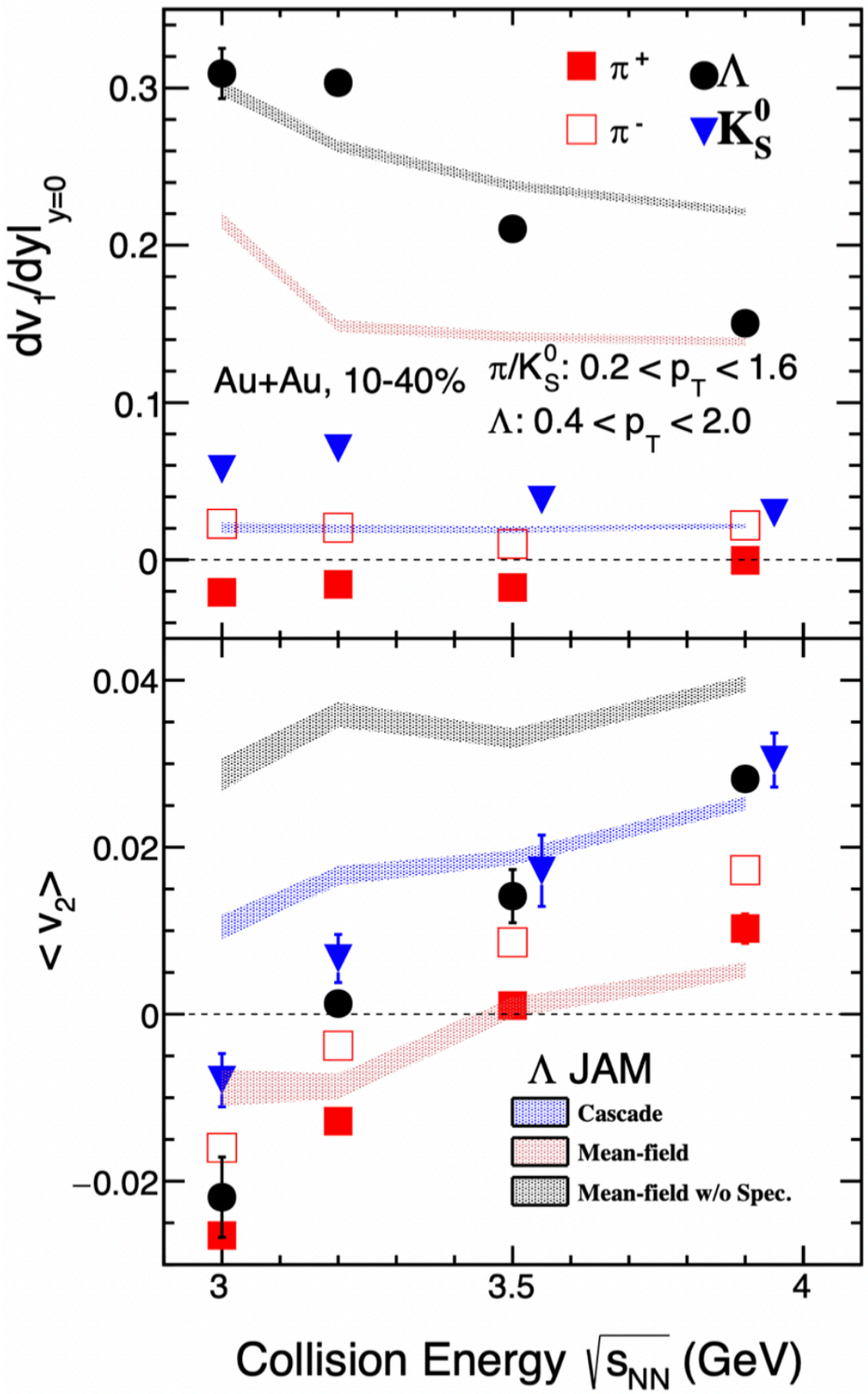
- Is the difference between the two methods resolved?
- Are all analysis cuts same? Can we check background contribution in the invariant mass method?

3. Main results, physics messages

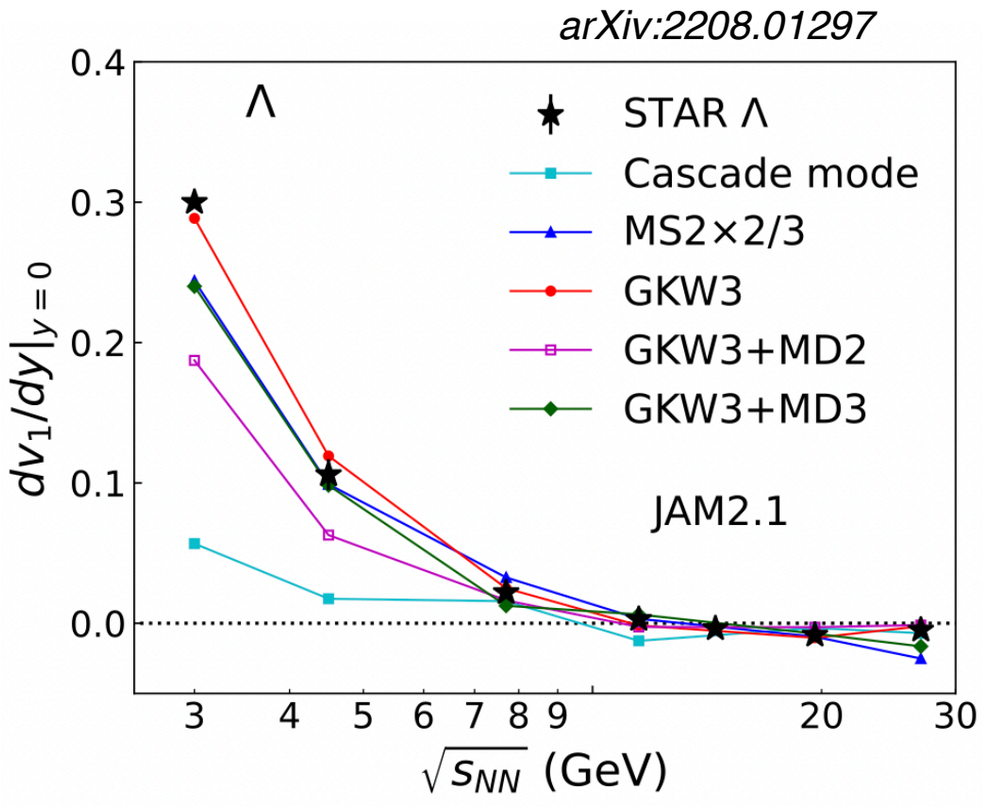


- K0s v_1 well described by JAM mean field. Disfavors kaon potential as opposed to previous predictions
- Can we add comparisons to other energies?
- How about v_2?

4. Main results, physics messages

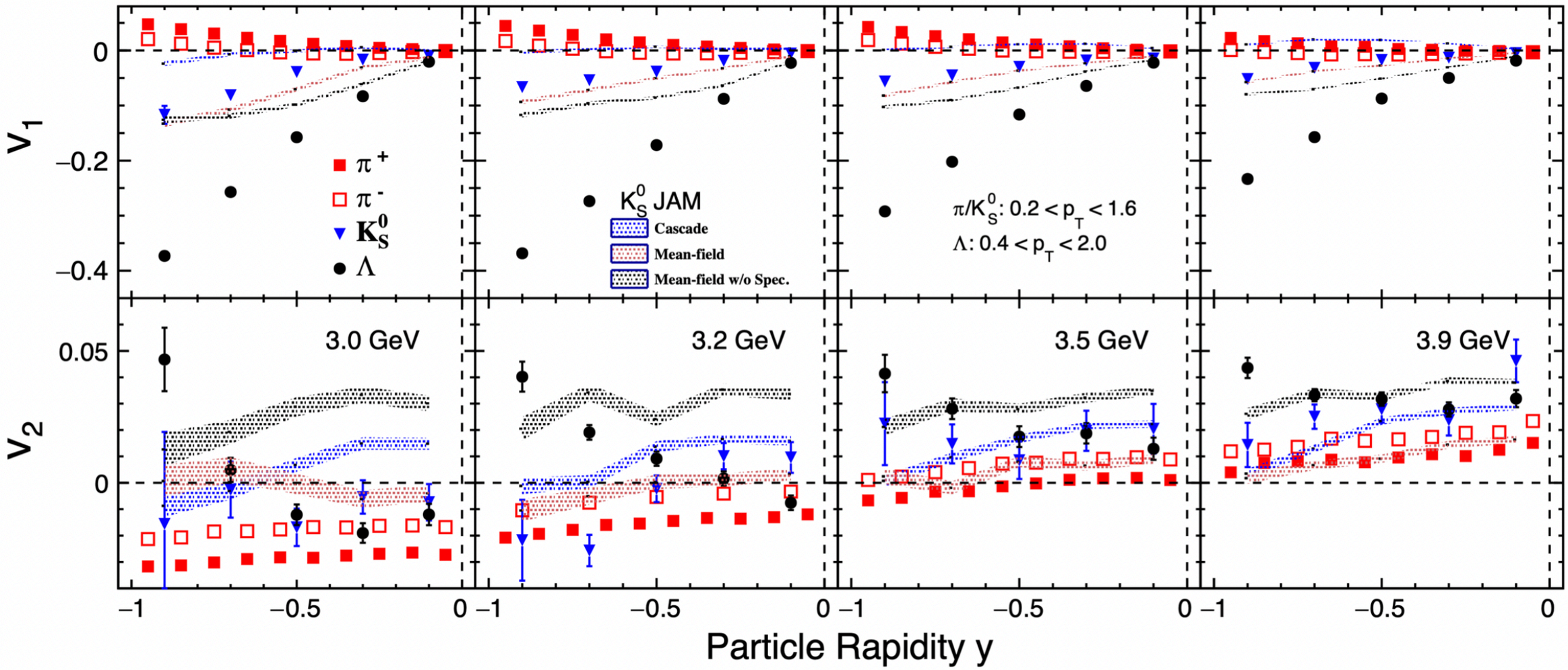


- Split between proton and Lambda v_1 unlike at higher energies (Can we add proton v_1?)
- Hydro calculations give same values for p and Λ v_1 —> Indicates presence of hadronic mean field interactions, turning off of QGP
- Presence of Lambda potential? Can we add model results?



5. Other results

- π^+, π^- flow difference
- NCQ scaling? Proton v_2 is difficult to access



6. Centrality calibration for 9.2 and 11.5

- Any volunteers? Xing Wu? Guoping?
- Important for many analyses for QM

Datasets and status

- BES-II (collider mode):
  - 19.6 GeV (QA and calibration done, implemented in StRefMultCorr)
  - 14.6 GeV (QA and calibration done, implemented in StRefMultCorr)
  - 11.5 GeV (Person power needed)
  - 9.2 GeV (Person power needed)
  - 7.7 GeV (QA is ongoing, some Glauber simulations have been shown, more analyzers have just volunteered)
- FXT:
  - 3 GeV Run18 (QA and calibration done, in process of implementation toStRefMultCorr)
  - 3.2 GeV (QA and calibration done,, in process of implementation to StRefMultCorr)
  - 3.5 GeV (QA and calibration mostly done (need to revisit), preliminary calculation in process of implementation to StRefMultCorr)
  - 3.9 GeV (QA and calibration done for Run19 (some checks are needed for Run20), in process of implementation to StRefMultCorr)
  - Other energy points (Person power needed. A few people volunteered for a couple of datasets)
- Non-BES-II:
  - Au+Au 200 GeV Run19 (QA and calibration done,, in process of implementation to StRefMultCorr)
  - O+O 200 GeV (QA is ongoing, some Glauber simulations have been shown, for a specific analysis)

Back Up