

SIDIS Subgroup Summary

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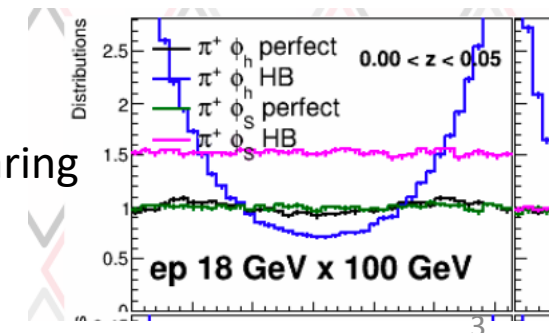
Reminder of channels

- Single Hadron SIDIS \rightarrow TMD PDFs, unpol PDFs, helicities and (n)FFs
- Di-hadron SIDIS \rightarrow PDFs
- Di-hadrons to constrain Gluon Sivers
- Di-hadrons/Di-jets to constrain Gluon Saturation
- Opportunities in Spectroscopy
- Polarized Lambda

Progress status

- **Fast simulations and acceptance plots for all channels** (as shown in Wednesday overview talk)
- Additionally
 - **Significant theory work** on all channels (see some discussed here in following slides)
 - **Fast smearing studies advanced to study physics signals and asymmetry projections**
 - Implementation of physics signals for single hadron TMDs, FFs, Gluon Sivers,
 - Integration of dedicated MC for Spectroscopy (see next slides)

Example:
Impact of electron smearing
on ϕ_h reconstruction
(R.Seidl)




TMD grids and tools for predictions

Chiara Bissoletti 

Online

08:30 - 08:50


Di-hadron and Lambda fragmentation

Christopher Dilks 

Online

08:50 - 09:10

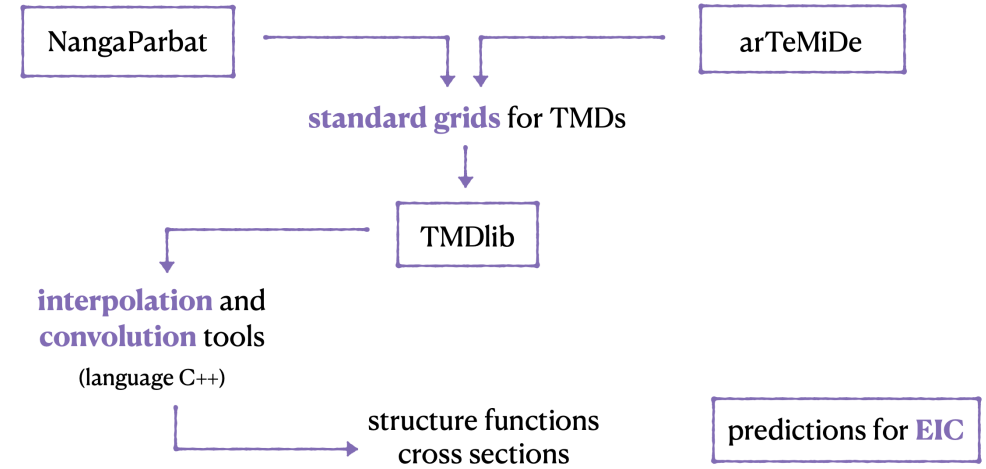
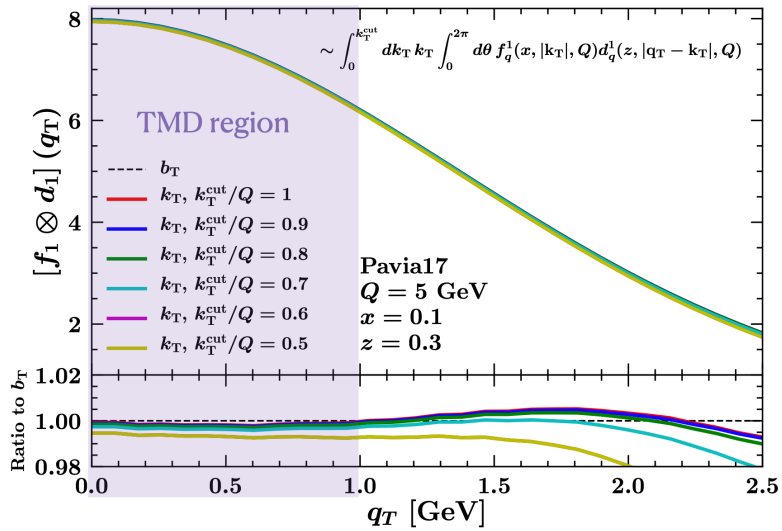
Spectroscopy at EIC

Justin Stevens 

Online

09:10 - 09:30

09:00




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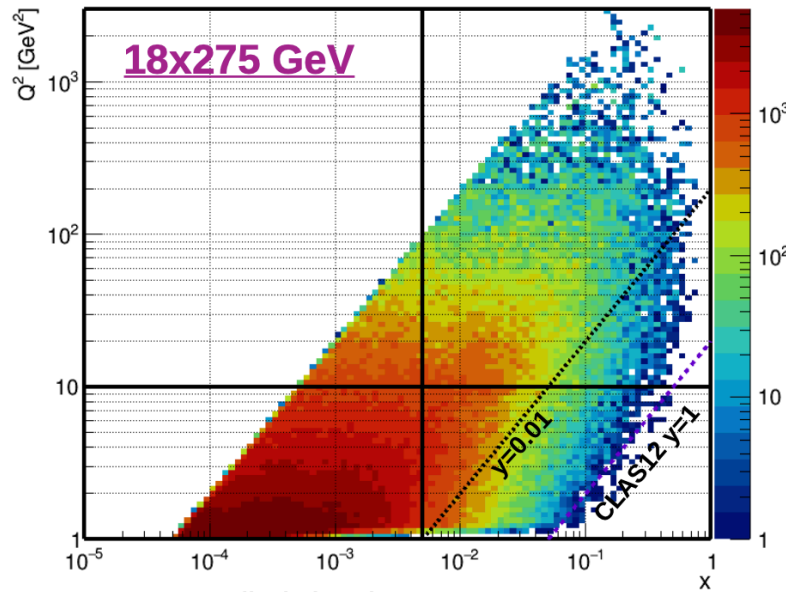
Online

09:10 - 09:30

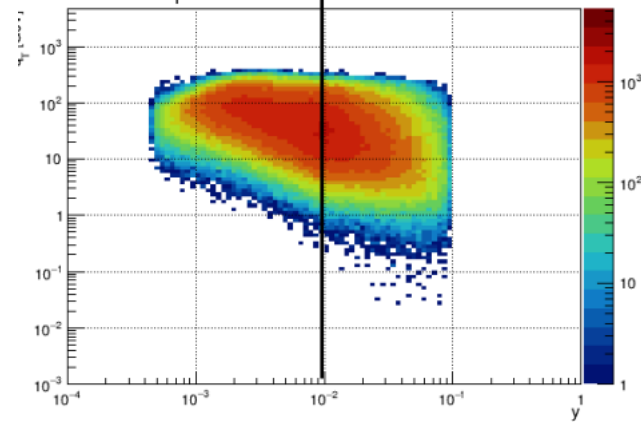
09:00



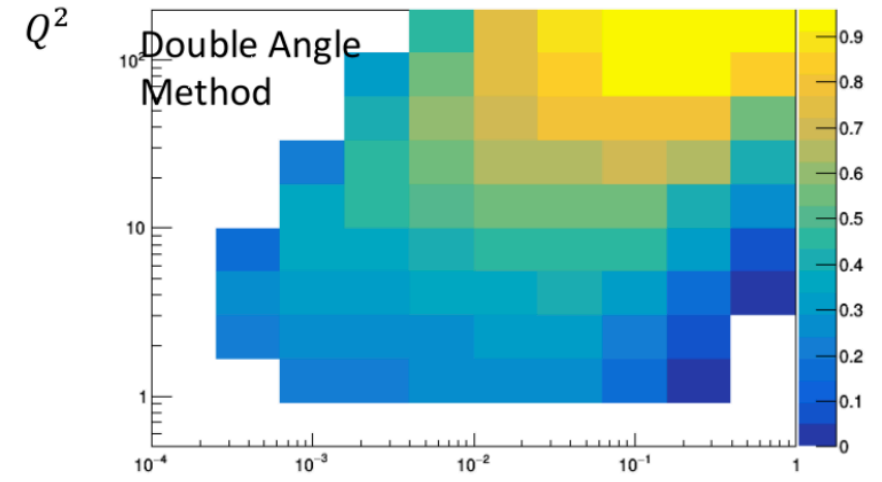
Q^2 vs. x for selected dihadrons



$\pi^+\pi^- q_T$ vs. y , for $1 < Q^2 < 10$ and $0.005 < x < 1$



Fraction of events staying in bin (18x275)

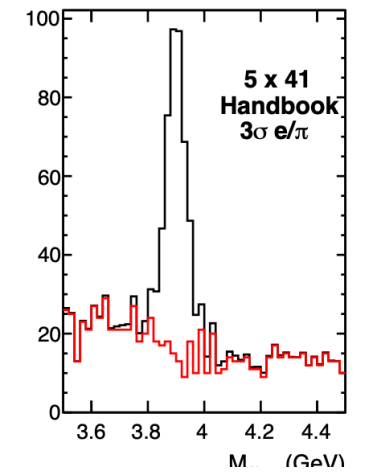
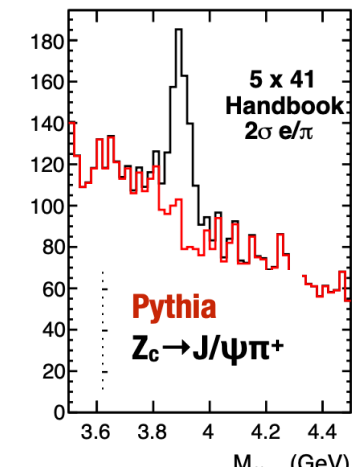


09:00

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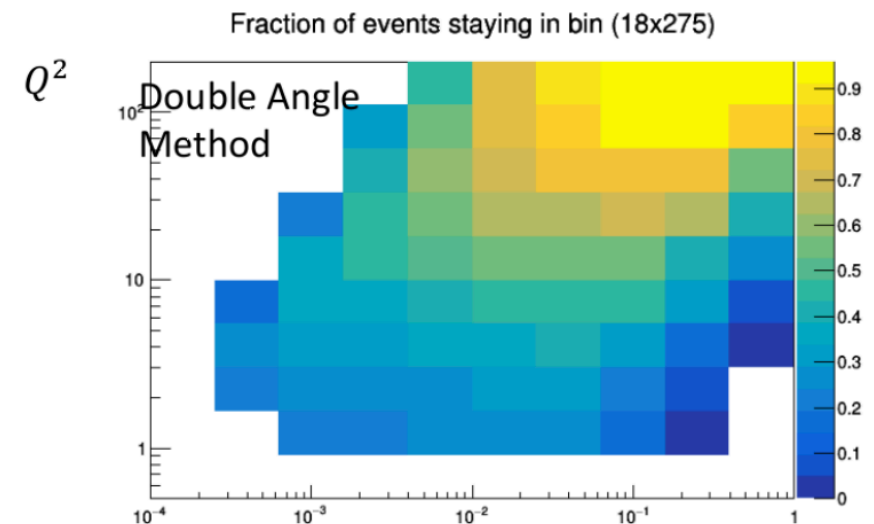


- Significant progress on modeling and event generator in collaboration with
- Integration of MC generators in EICSmear
→ Strong dependence of requirements on CME
- First Background studies
- Spectroscopy group grew significantly, now JPAC, JLab, Flo W&M, Glasgow, INFN, Regina...



Jet/HF/Inclusive/SIDIS WG Joint Session

- **Overlap in interest in TMDs/saturation with Jets, DP gluon distribution**
- Discussion in particular overlapping interest in CC events (Jet/DIS/SIDIS)
→ **need for hermeticity, resolution of hadronic final state**
- Interest in evaluation of relative impact of different CC probes
- Impact of DIS/Jet/SIDIS on (polarized) strangeness
→ SIDIS will likely be needed
- **DIS group already advanced studies on radiative effects → lessons for SIDIS?**



Detector WG Joint Session

- SIDIS group is studying requirements for
 - Tracking
 - PID
 - Displaced vertices
 - Hermiticity/Homogeneity
- Since requirements are correlated, main request: Provide several "reasonable variations" of detector versions that are consistent with themselves
- Additional question to far forward implementation

Summary and Future Steps

- SIDIS group has made progress for all channels
- Significant next steps
 - Implementation and extraction of physics signals
 - Exploration of possible detector configurations
 - Refinement of physics models (e.g. radiative effects) and detector responses (PID, vertexing, forward instrumentation)
 - Systematics from unfolding
 - Impact studies