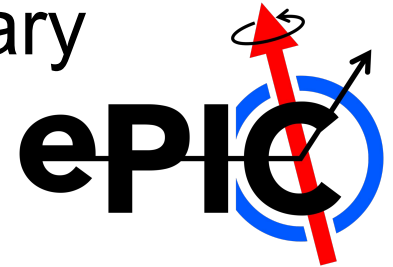


Exclusive/Diffraction/Tagging

Early Science Report Appendix Summary

Stephen and Kong

17th March 2026



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- A whistle stop tour of the key tables and figures...

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- Tables summarising key sources of systematics/uncertainties

DIS & physics ($Q^2 > 1 \text{ GeV}^2$)	Machine	
DVCS	3% for DIS and $< 1\%$ from π^0	
DV π^0 P	0% low t and 60-100% for high t	
DEMP	0.012% for DIS	
DVMP	$< 40\%$ but can be removed by mass fits	
eAu ϕ	$\sim 1\%$ incoherent	
eHe3	Photoproduction (not studied here)	

	Dominant systematics source	Estimates
DVCS	BH interference?	
DV π^0 P	cluster merging	
DEMP	Scale uncertainty	12%
DVMP	Background estimation and efficiency	
eAu ϕ	Incoherent background and unfolding	
eHe3	Far-forward mistagging rate?	

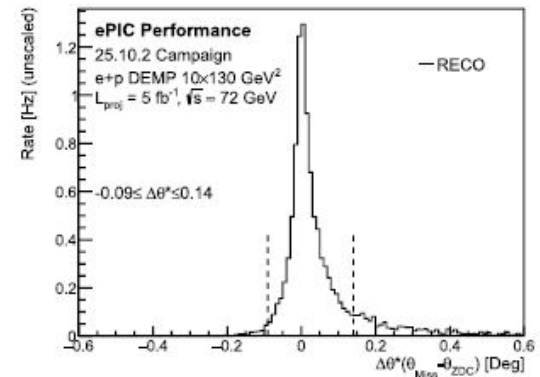
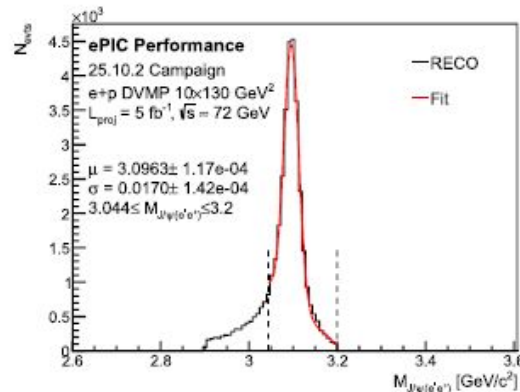
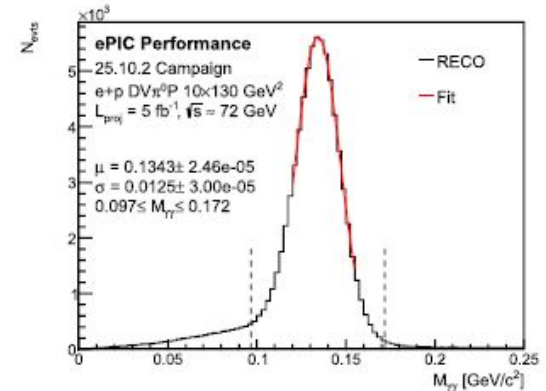
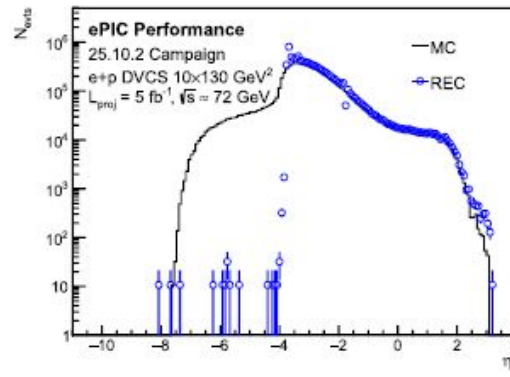
^ Fixed in Overleaf!



	DIS & machine background contamination ($Q^2 > 1 \text{ GeV}^2$)
DVCS	3% for DIS and $< 1\%$ from π^0
DV π^0 P	0% low t and 60-100% for high t
DEMP	0.012% for DIS
DVMP	$< 40\%$ but can be removed by mass fits
eAu ϕ	$\sim 1\%$ incoherent
eHe3	Photoproduction (not studied here)

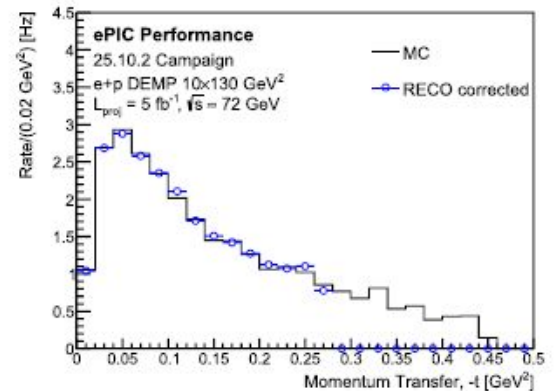
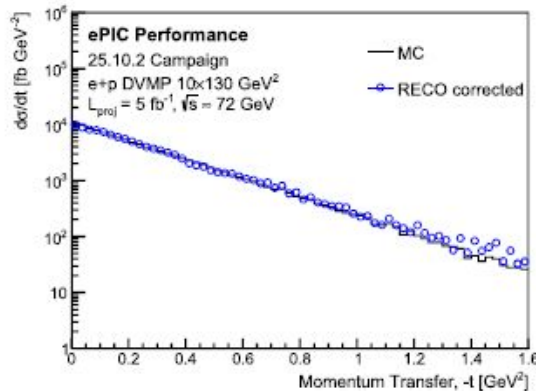
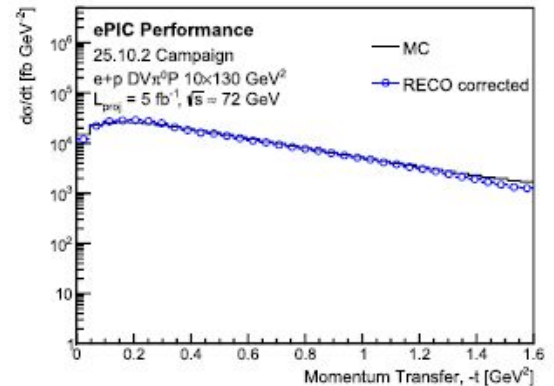
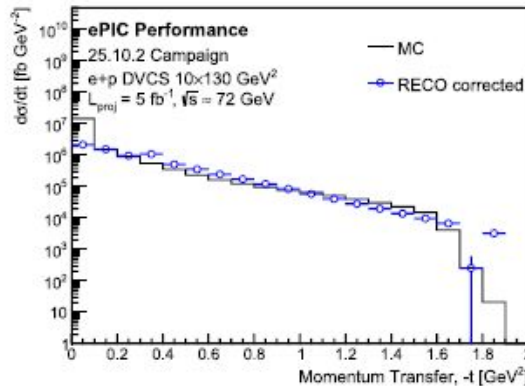
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- Grouped “Deep virtual/exclusive... process into one section
 - DVCS
 - DVMP
 - DEMP
 - ...
- “Key performance plot”
 - E.g. quantity that is part of a key cut



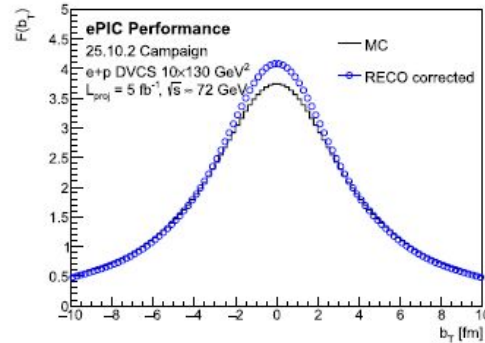
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- $-t$ distribution reconstruction
- Comparison between MC truth and corrected reco dists
- Showcase performance of detector

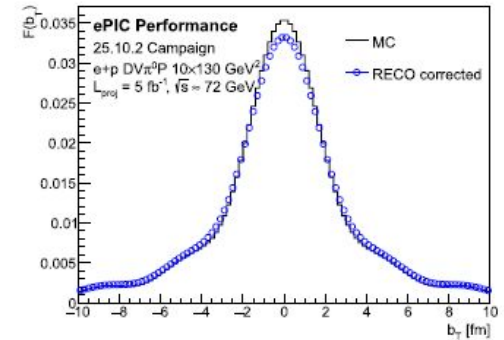


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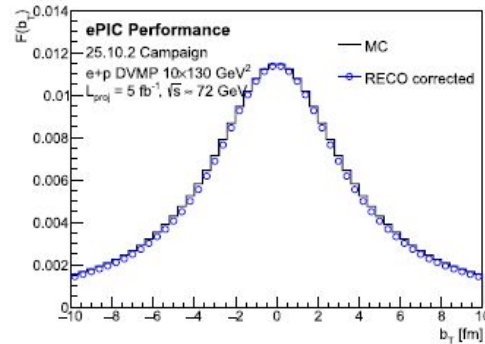
- A final “impact” plot for each channel
- Idea is that this final four panel figure shows the key output for each channel
- Need to refine for some, particularly wrt connecting to current state of the art
- For DVCS, in discussion with theorists



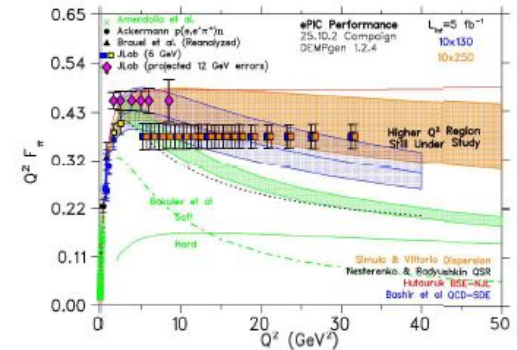
(a) DVCS



(b) DVMP π^0

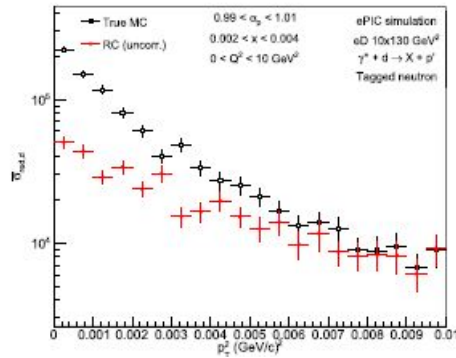
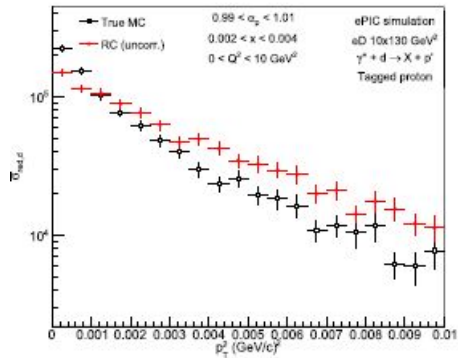


(c) DVMP J/ψ

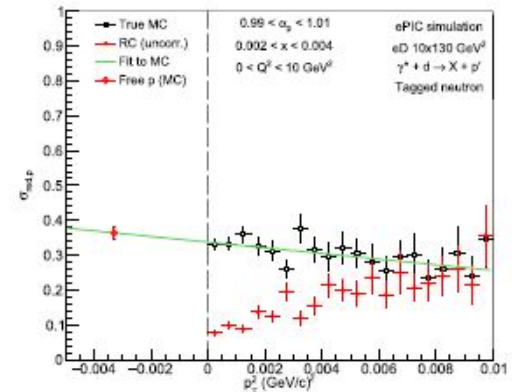
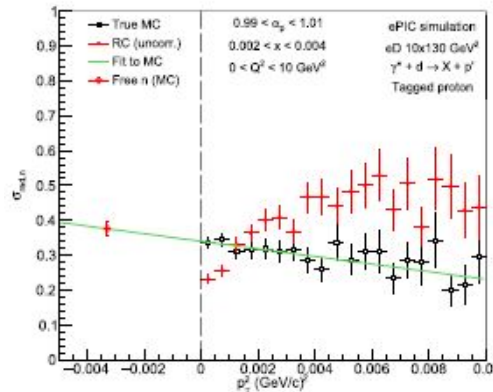


(d) DEMP

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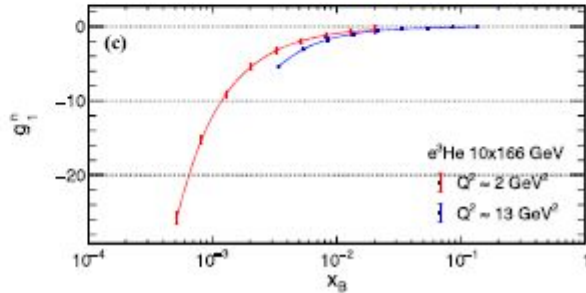
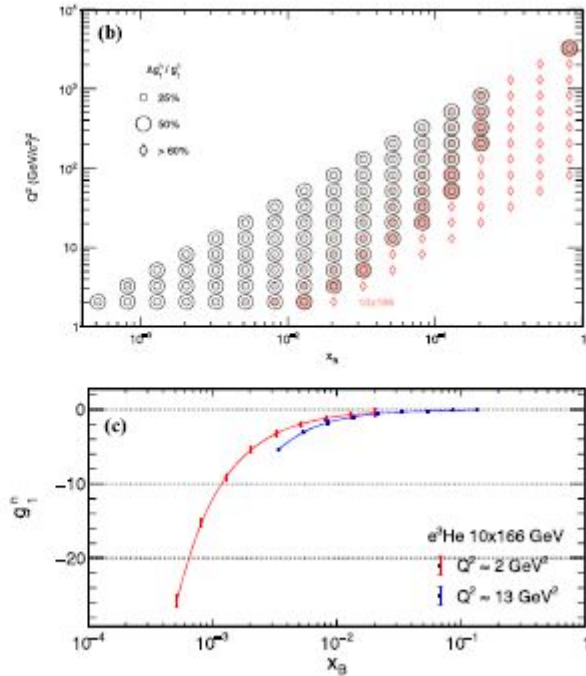
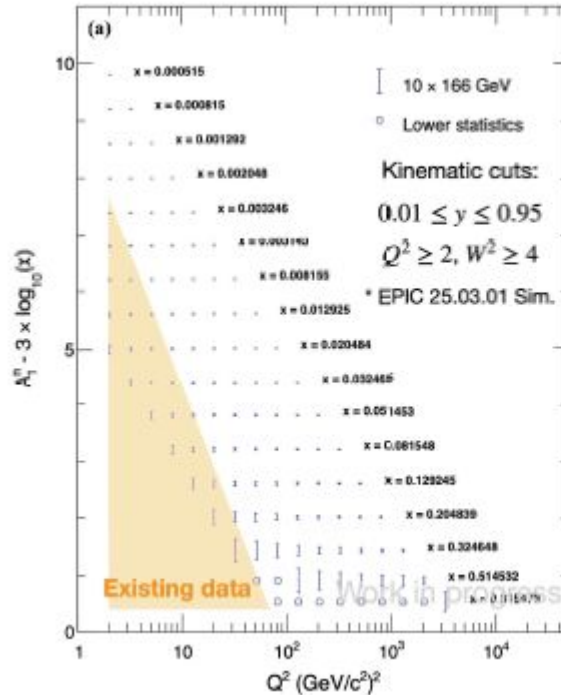


- Tagged deuteron DIS
- Very new plots!
- Final fig, C7 needs formatting updates



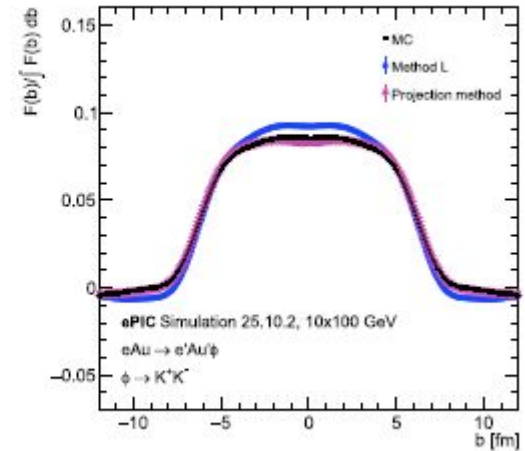
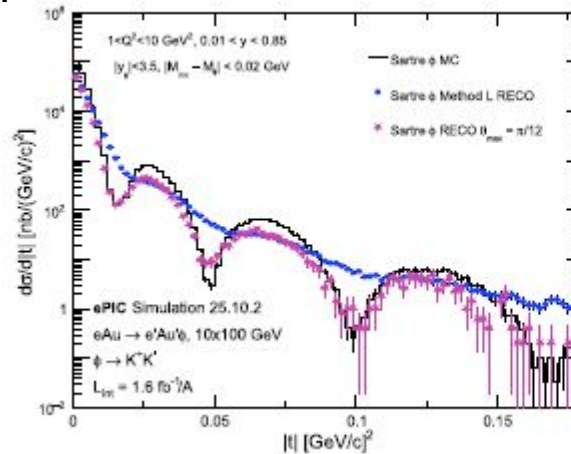
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- ^3He Double Tagging
 - A1n results
 - Reduced overlap with inclusive



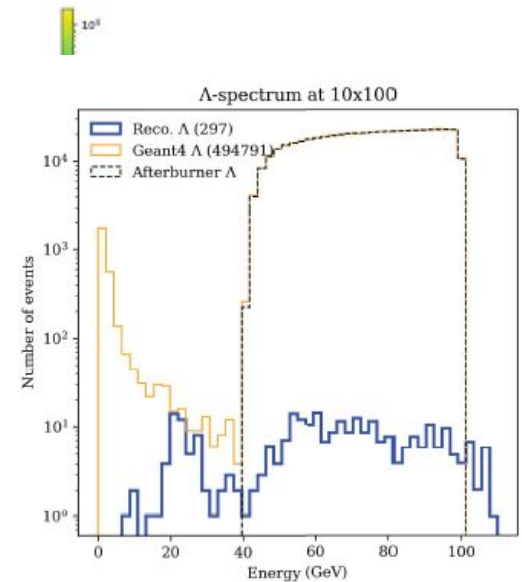
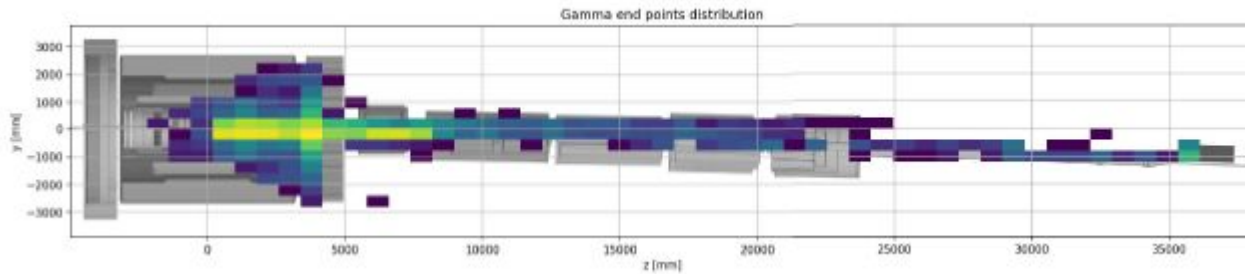
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- Diffractive ϕ production in eA
- Details of procedure



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- Kaon SF measurements
- Very new channel, need simulation campaign results
- Promising FF reconstruction improvements -> Future TDR input?



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- General comment, all plots will be updated with 23.03.0 files when available
 - May be ready as soon as end of this week
- Text in Appendix was copied in from a draft of the “Early Science Paper” the EDT group was planning
 - Dropped some introductory text - Add it back?
 - How “standalone” should each appendix/NIM article be?
- In general, need more links to existing/previous measurements as suggested for the ESR in general
 - What’s “added” by the EIC/ePIC?
- Other thoughts
 - Wait for more channels to be finalised or go to publish ASAP?
 - E.g. TCS, Upsilon, Kaon SF - All might be “ready” soon
 - How much space/text to devote to “what’s next?”
 - Don’t want to look like we can do everything in the ES period and there’s nothing to look forward to!

Thanks!
Any questions?

