

Simultaneous Access to DVCS and DEMP at Large Skewness

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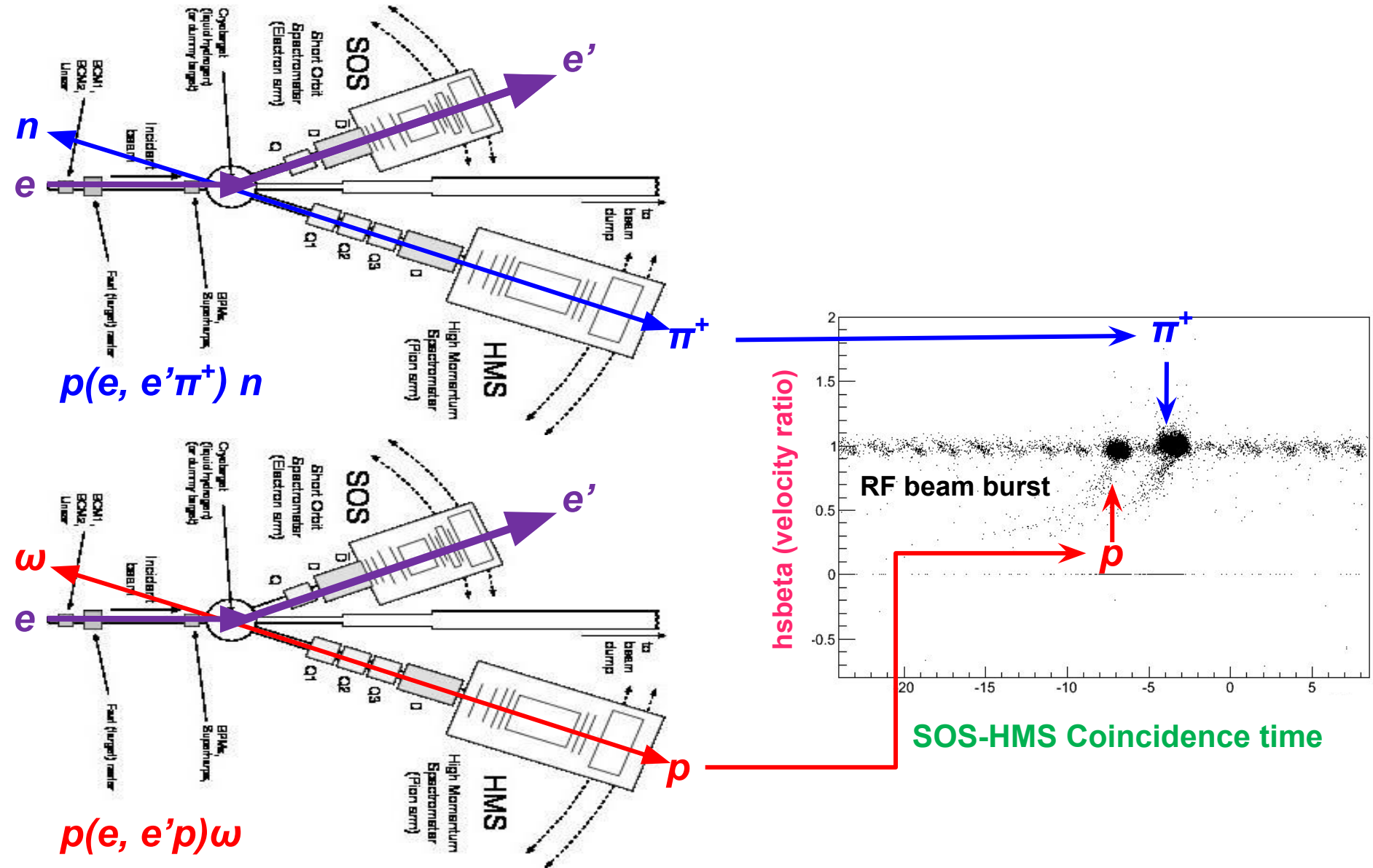


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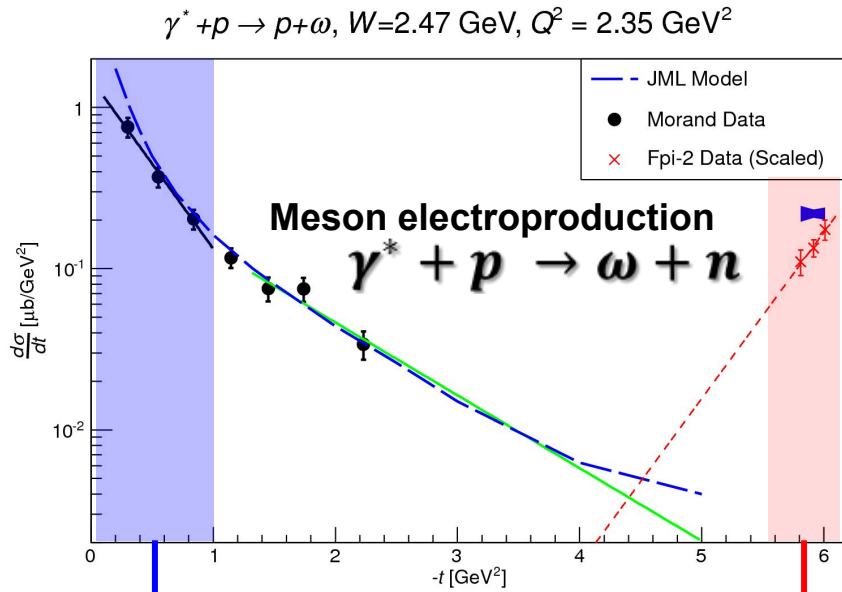


What is Backward Angle Physics ?

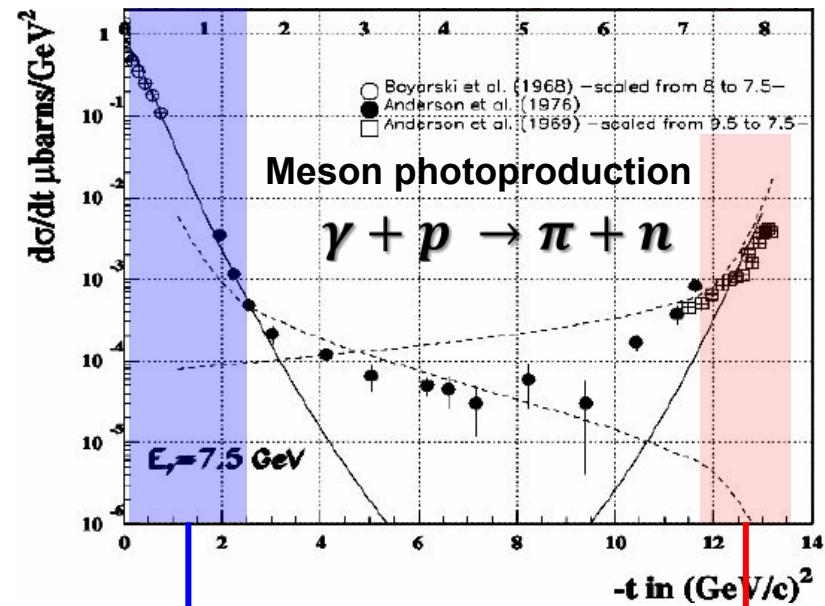


Backward Angle Physics: Access to Unknown Kinematics

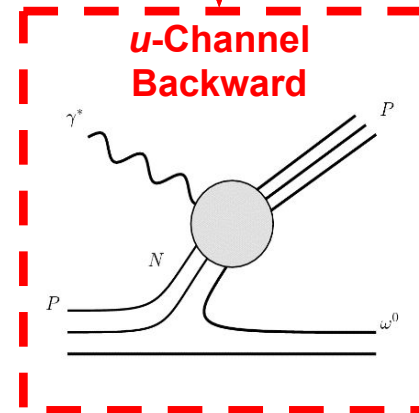
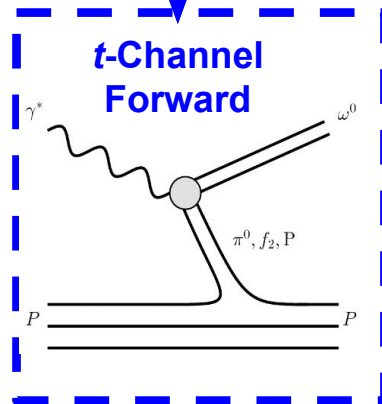
M. Guidal, J.-M. Laget, and M. Vanderhaeghen. *Physics Letters B* 400(1):6–11, 1997.111



Meson pole



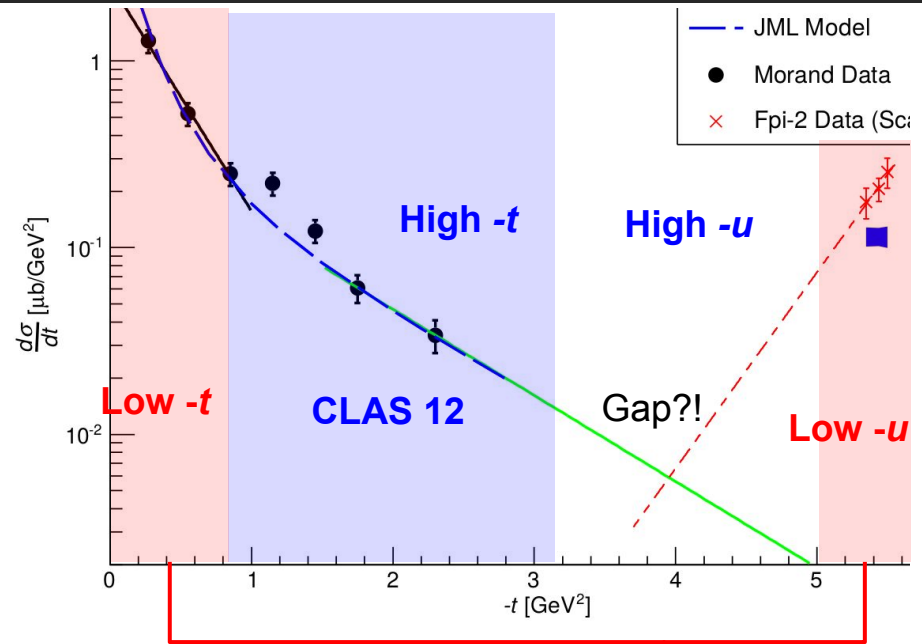
Baryon pole



Soft structure → Hard → Soft transition !

What can we learn from the backward angle observable?

- Why Now?
 - Backward angle cross section is demonstrated to be non-zero!
- Complete picture of $-t$ evolution
 - Provide low $-u$ cross section
- Regge Model
 - Study the baryon Regge pole (trajectory)
- GPD factorization at larger $-t$ (TDA) in the backward angle
 - Alternate or parallel methodology
- Quantify physics meaning of u
 - $t \rightarrow$ impact parameter
 - $s \rightarrow$ invariant mass
 - $Q^2 \rightarrow$ Resolving power
 - $u \rightarrow ?$
 - better understanding t leads to understand of u

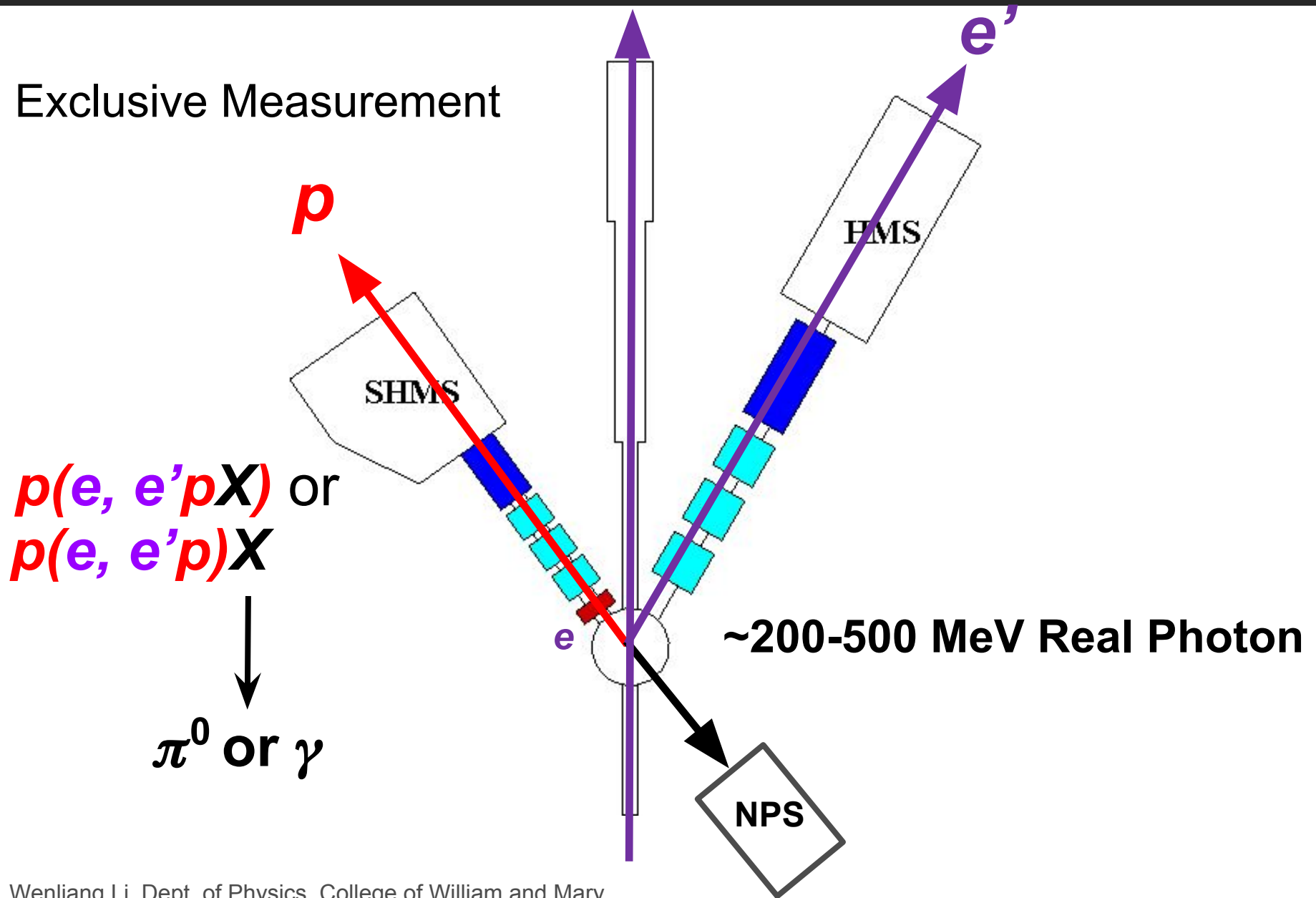


Hall A/C LT separation near
meson and baryon pole
(extreme forward/backward
angle)

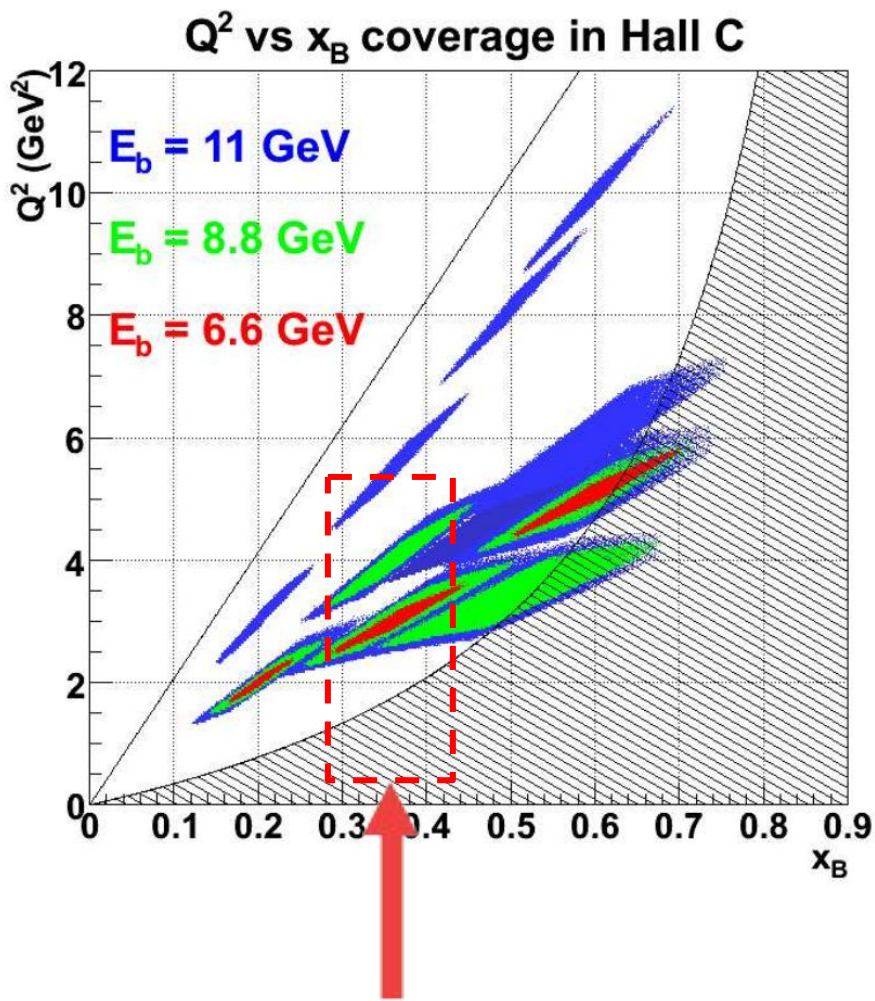
$Q^2=1$ GeV, $W=1.5$ GeV

How Do We access the backward angle physics?

Exclusive Measurement

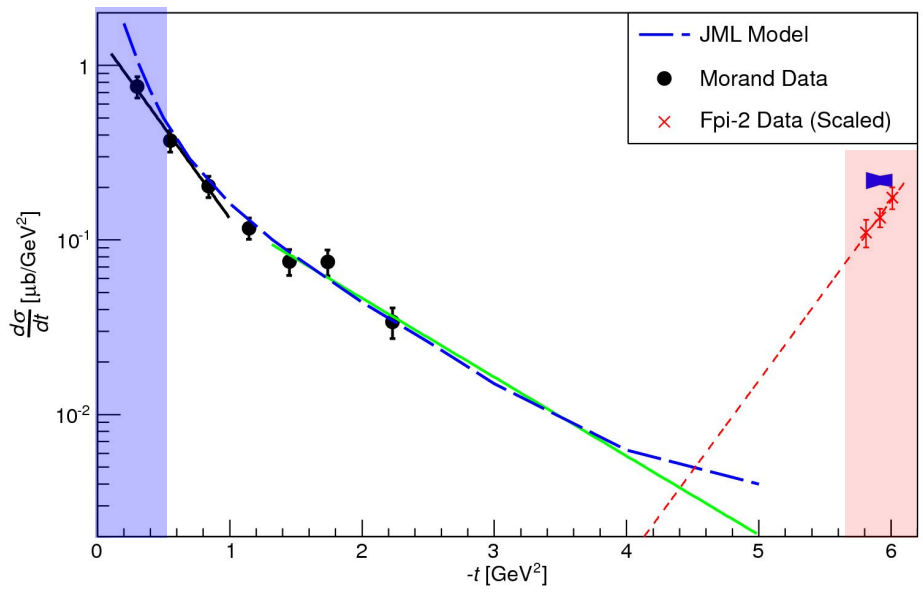


At What Kinematics?



$W = 2.65$ GeV, $x = 0.36$

Q2	E_{Beam} (GeV)	HMS Angle Degree	SHMS Angle Degree	NPS Angle Degree	ε	$-t$	$-u'$
3	6.6	26.5	-11.7	168.3	0.54	>7.5	0.0
	10.9	11.8	-16.2	163.8	0.86	>7.5	0.0
4	8.8	22.9	-10.3	169.7	0.55	>10.2	0.0
	10.9	15.6	-12.4	167.6	0.73	>10.2	0.0



Forward Angle Pi^0 and DVCS

Forward Angle Pi^0 and DVCS

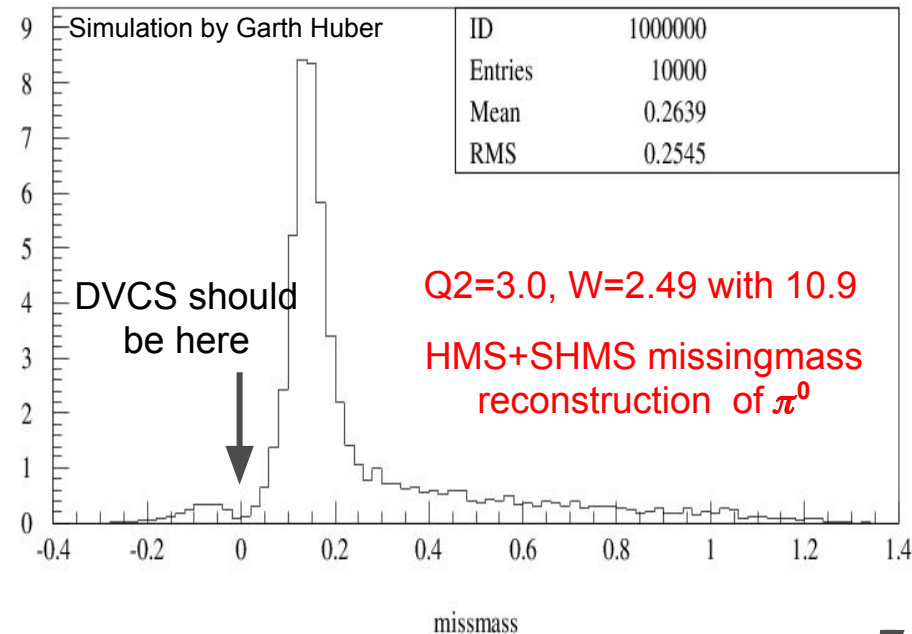
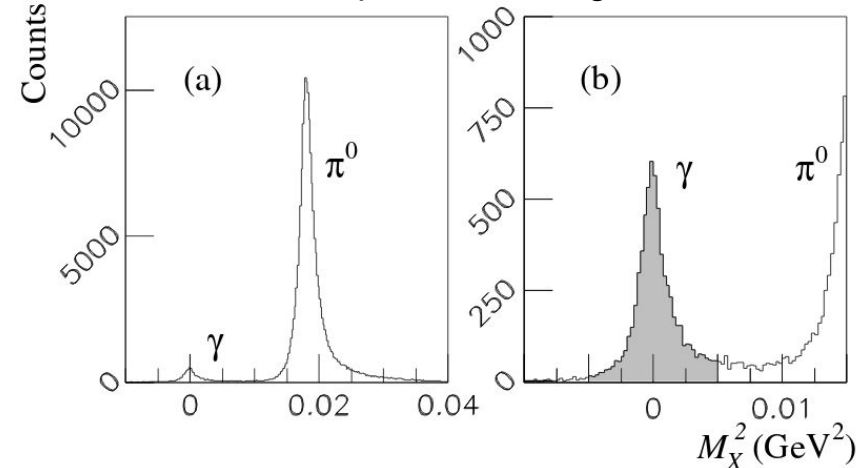
Requirements for Backward Angle DVCS and π^0 Program

- **Backward angle π^0 Program**
 - $W = 2.65$ GeV, $x = 0.36$, $Q^2 = 3, 4$ GeV
 - **Standard L/T Separation**
 - SHMS + HMS
 - Missingmass reconstruction method applies.

- **Backward Angle DVCS Program**
 - Run simultaneously with the π^0 Program
 - LT Separation?
 - **Require NPS for ~ 300 MeV real photon (possible?)**
 - **A three ton stand required.**
 - **Triple coincidence**

- **LOI for PAC 2018**

Hall A Backward Angle Virtual Compton Scattering, 2009



Thank you

