Jefferson Lab Users Organization Annual Meeting

24-26 June, 2019

Highlights from Run Group B

Katheryne Price, IPN Orsay

for the CLAS Collaboration

25/06/2019

Overview of Run Group B

Run schedule	50% of approved PAC days
6/02 – 25/03 (completed) 1/11 – 19/12 (upcoming)	

- 7 experiments:

Electroproduction on deuterium for measurement of FFs, PDFs, GPDs, J/ψ & SRC

- 7 PhD theses in progress:

K. Price (IPN Orsay)	nDVCS
P. Naidoo (Glasgow)	Exclusive π^0 on neutron
Student from Yerevan	J/ψ
E. P. Segarra (MIT)	BAND experiment
R. C. Torres (MIT)	BAND experiment
C. Fogler (ODU)	BAND experiment
B. Tumeo (USC)	J/ψ
L. Basheen (FIU)	GMn

Overview of Run Group B

Run schedule
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- 7 experiments:

Experiment number	Title	Rating/approved days	Setup
E12-07-104	Neutron magnetic form factor	A-, 30 days	LD2 target
E12-09-007(a)	Study of partonic distributions in SIDIS kaon production	A-, 56 days	LD2 target, RICH
E12-09-008	Boer-Mulders asymmetry in K SIDIS	A-, 56 days	LD2 target, RICH, half time with reversed torus polarity
E12-11-003	Deeply Virtual Compton Scattering on the Neutron	A (high impact), 90 days	LD2 target, FT
E12-09-008(b)	Collinear nucleon structure at twist-3	RG experiment	LD2 target, RICH, half time with reversed torus polarity
E12-09-008(a)	In medium structure functions, SRC, and the EMC effect	RG experiment	LD2 target, BAND
E12-11-003(b)	Study of J/ψ photoproduction off deuteron	RG experiment	LD2 target, FT

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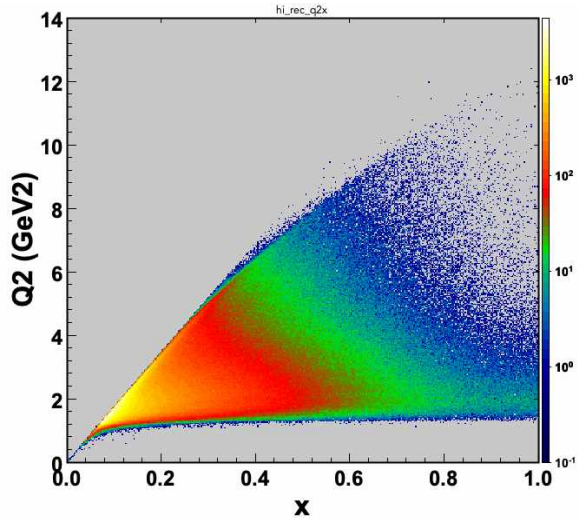
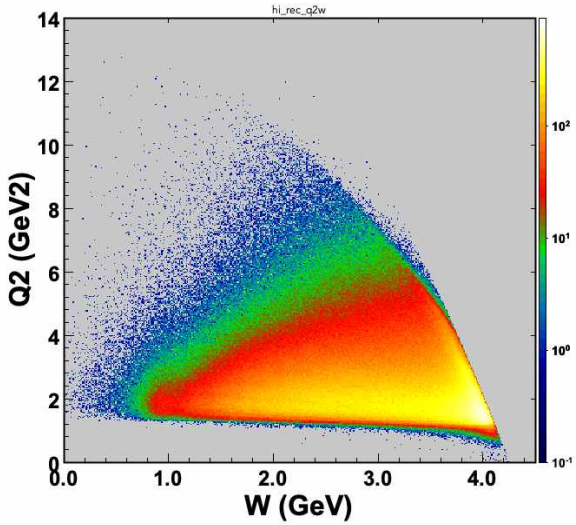
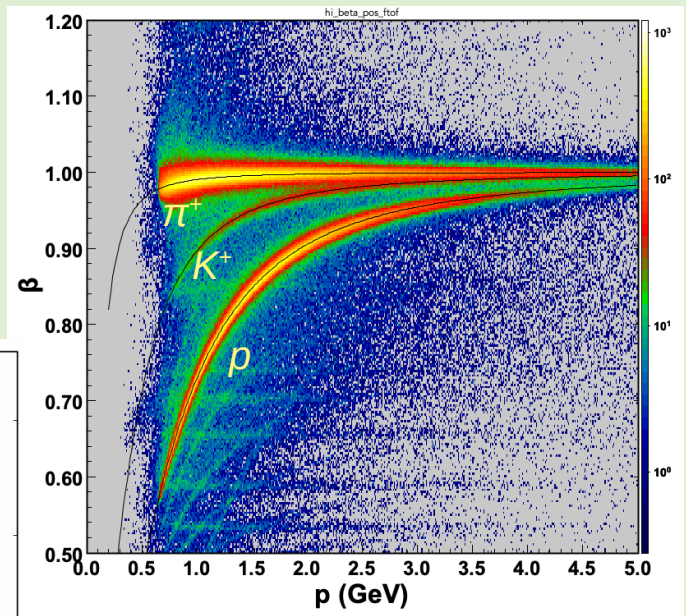
Kinematic Coverage & Calibration Quality

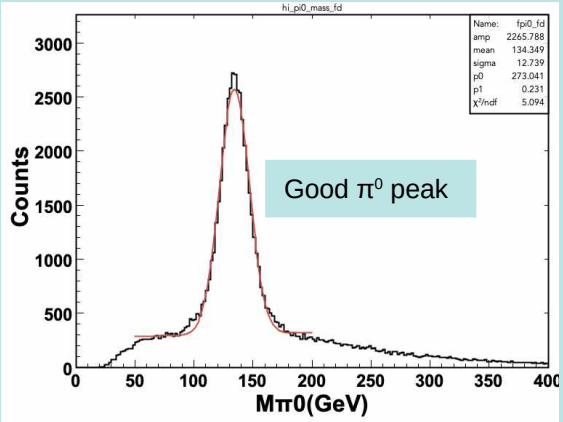
Monitoring plots from run 6489 (about 2 hours of data)



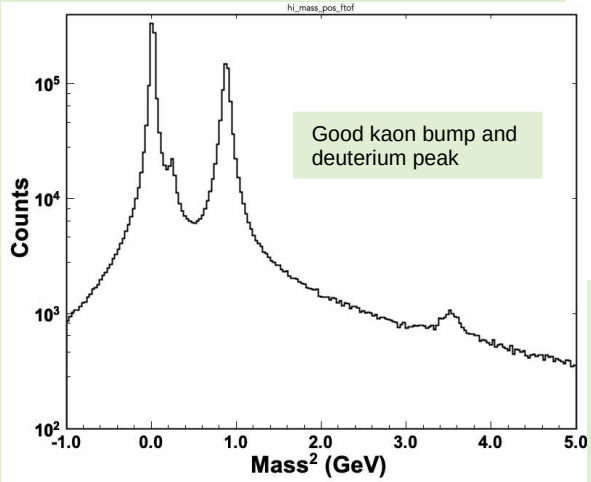




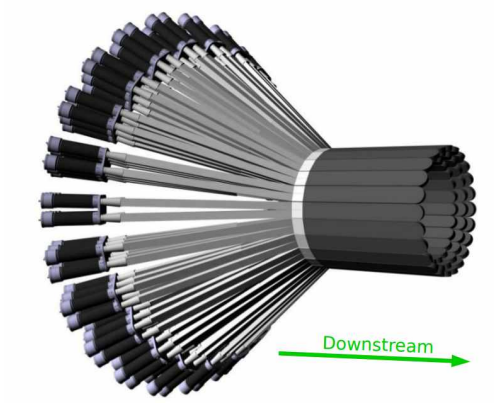
ECAL

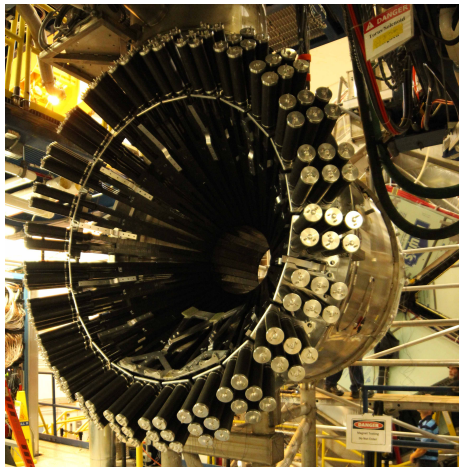


TOF



Central Neutron Detector





Specifications

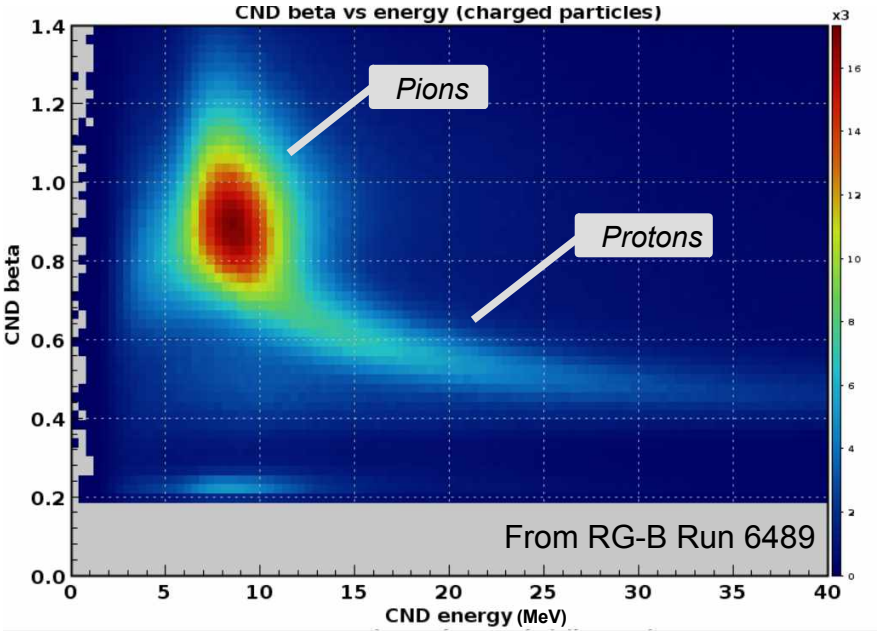
Plastic scintillator

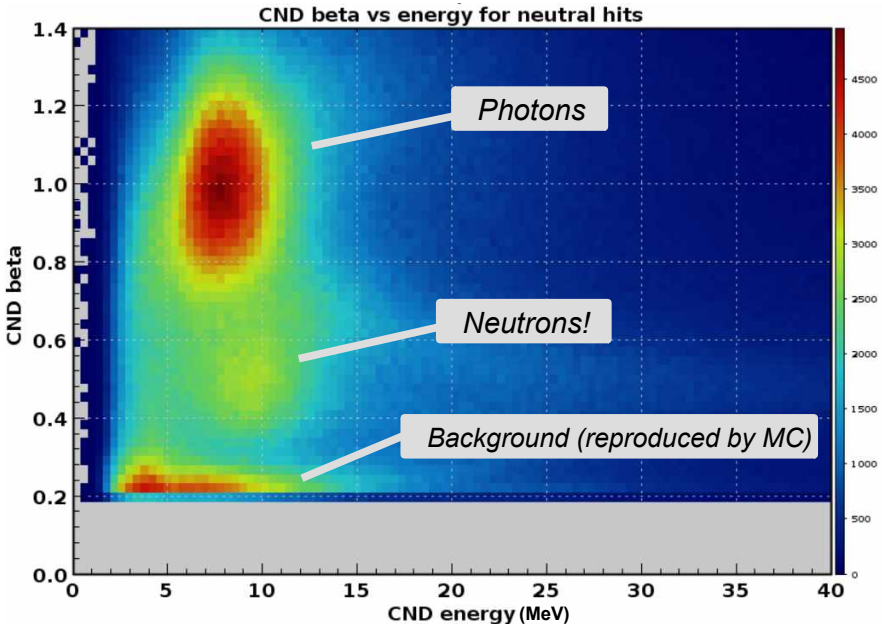
3 radial layers, total ~10 cm

Angular coverage 40° < θ <120°

Azimuthal coverage 2π

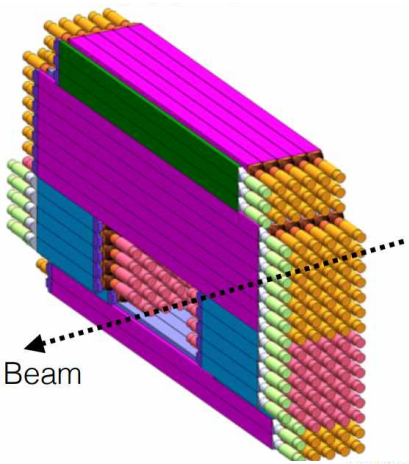
Neutron detection efficiency ~10%

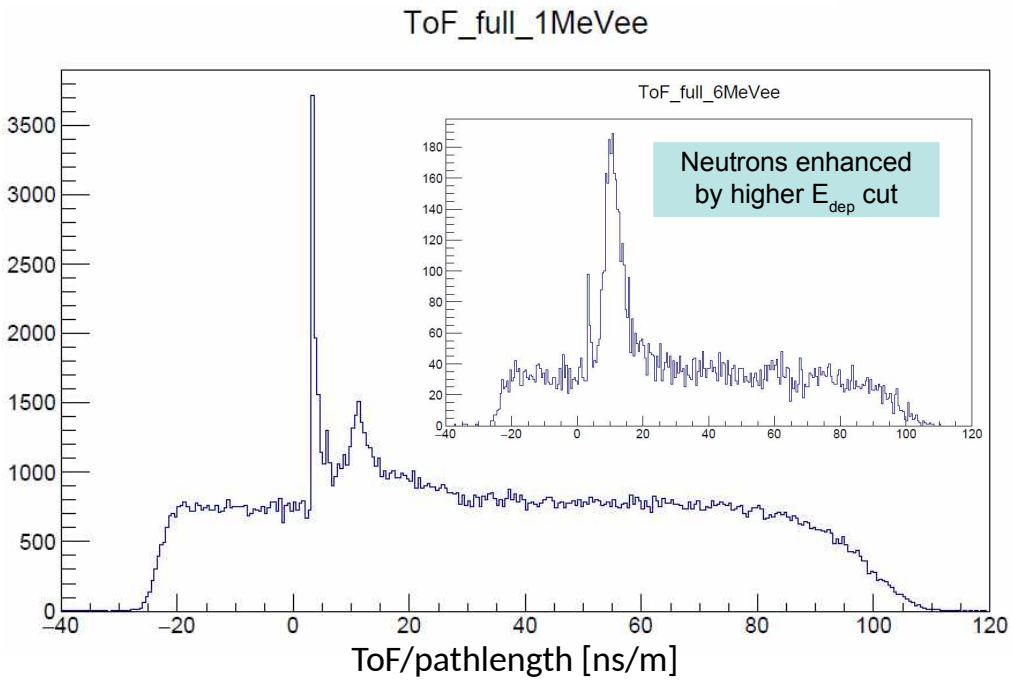


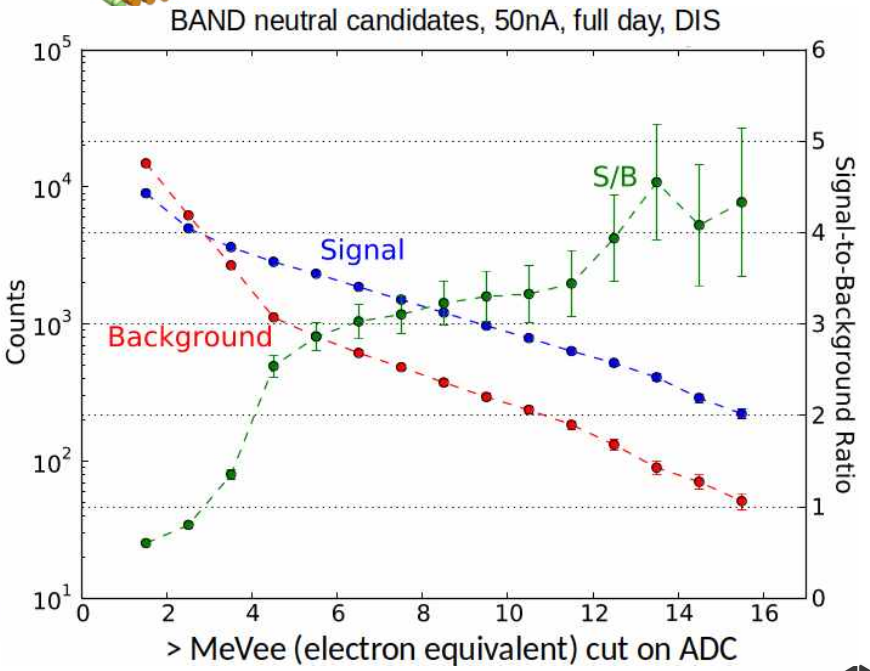


Back-Angle Neutron Detector

Specifications
Plastic scintillator
6 layers, including 1 veto layer
Angular coverage 155° < θ <176°
Neutron detection efficiency ~35%

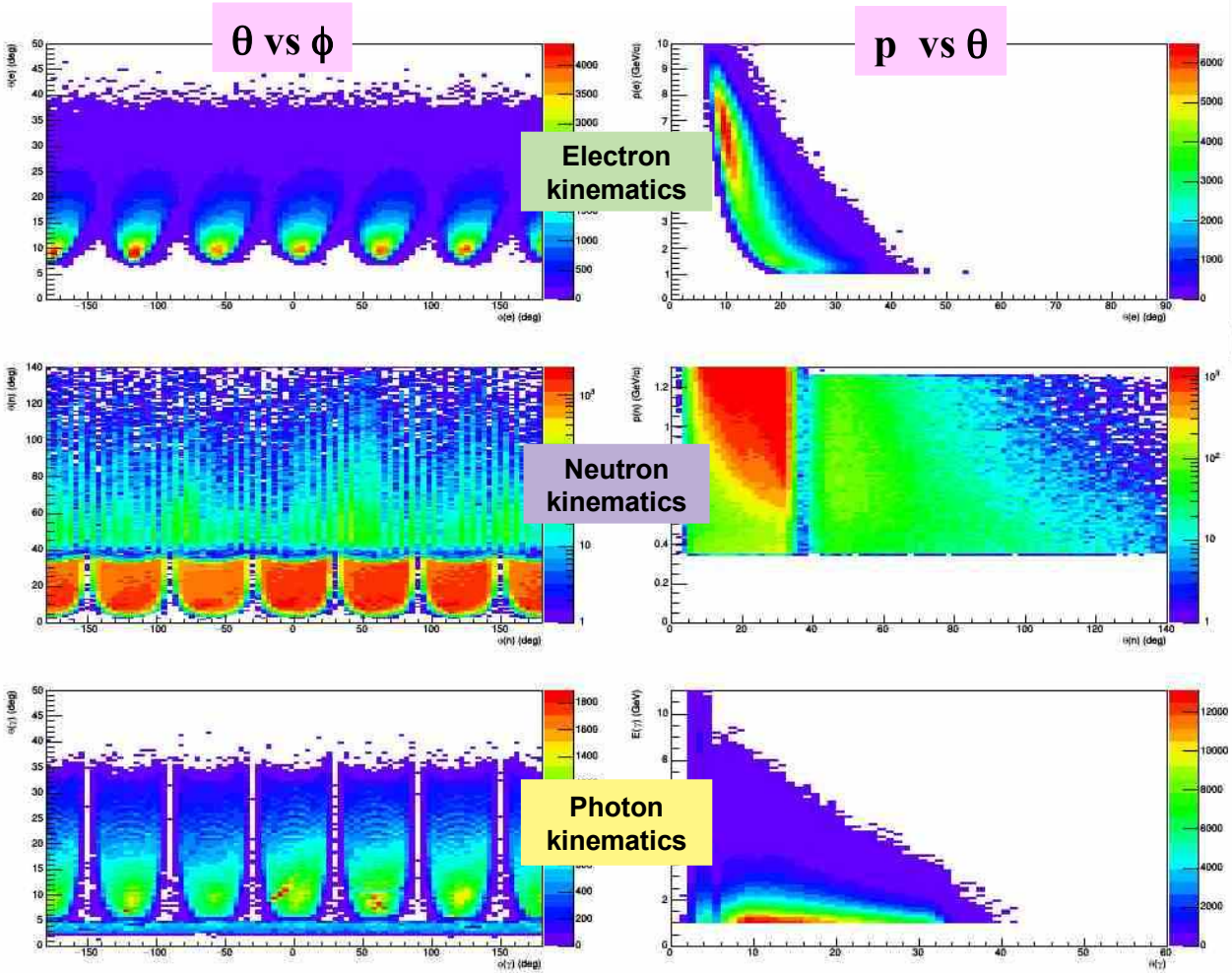


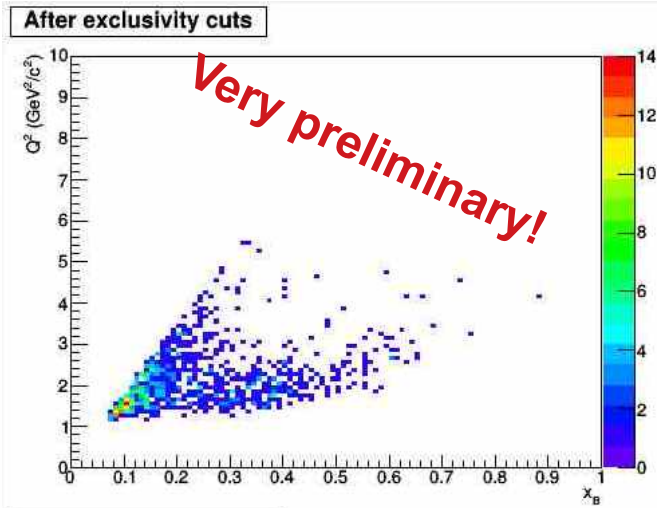


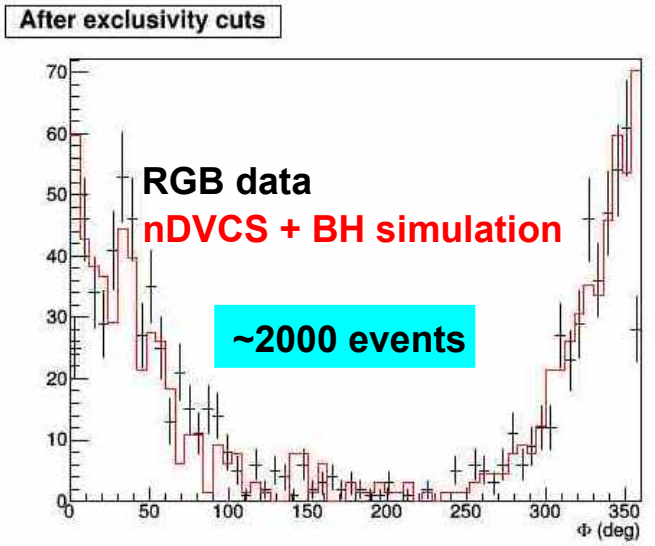


Preliminary nDVCS (ed→e′n′γ) Analysis

- 6 runs, **~2.5% of spring run**
- PID: e n γ detected
- Kinematic cuts: Q^2>1 GeV^2, p(e)>1 GeV, θ(e)>5.5°, p(n)>0.35 GeV
- Preliminary « spectator » and « DVCS » cuts on MM^2(e n γ), missing energy, missing momentum, E_γ>2 GeV







Summary

- Run Group B is comprised of 7 experiments related to electroprodution on deuteron for measurement of FFs, PDFs, GPDs, J/ψ, and SRC
- Calibration quality continues to improve
- CND and BAND both detecting neutrons
- Will resume data-taking in November!