

# eA Study Group – formation and its activities

*- Kong Tu, BNL*

Disclaimer: this is not a physics talk

# Group formation

## Why eA Study Group is formed?

We (at least I) think there are too many meetings happening, but too few are focused on discussing physics or realizing physics, e.g., in ePIC or EIC 2nd detector.

## What is the goal?

To stimulate or kick-start physics discussions, provide an encouraging environment that “feel free to discuss a new idea”, **help beginners get started** with their EIC physics involvement that it is difficult for the collaboration to do, **follow up with weekly analysis update**, help **publishing papers for early-career scientists**, and facilitate the ePIC developments on multiple fronts.

## Who can come?

Anyone. This is not part of the ePIC Collaboration. It's self organizing and anyone can come and go as they wish.

# Group information

**Email list:** [epic-ea-study-group@brookhavenlab.onmicrosoft.com](mailto:epic-ea-study-group@brookhavenlab.onmicrosoft.com), if you want to join, contact Kong ([kongtu@bnl.gov](mailto:kongtu@bnl.gov))

**Mattermost channel:** *eA Study Group* under ePIC

**Indico page for weekly meeting:** <https://indico.bnl.gov/category/470/>

**First meeting:** March 9, 2023

**Number of members:** 28-30

**Average number of participants per week:** 6-8 ( 30% of all members)

# Group interests

From undergrads to senior scientists

Name	Task 1	Task 2	Task 3
Michael Pitt	eA VM coh & incoh	photon-photon & BSM	FF detectors & B0
Eden Mautner	eA VM coh & incoh	photon-photon & BSM	
<b>Bill Lee</b>	backward u channel	photon-photon & BSM	
Zachary Sweger	backward u channel	eSTARlight	
Ziyuan Zhang	backward u channel	Event Display	
Charles Joseph Naim	eA VM coh & incoh	A-dependence	Nuclear structure & fluctuation
<b>Peter Steinberg</b>	inclusive eA diffraction	eA VM coh & incoh	
Minjung Kim	eA VM coh & incoh	Upsilon threshold production	
Niv Ramasubramannian	DVCS/DVMP	Light nuclei	
Jackson	incoherent in light nuclei		
Jason Phelan	incoherent in light nuclei		
<b>Alex Jentsch</b>	incoherent in light nuclei	FF detectors	
Kong Tu	eA VM coherent & incoherent	incoherent in light nuclei	BeAGLE
Mark Baker	eA everything	BeAGLE	
<b>Niseem Magdy</b>	Deformation	BEAGLE	
Jan Vanek	Lambda spin-spin correlation.		
Jaydeep	ep/A VM with muon final-states		
Tyler Hague	Pion structure with neutron tagging	DEMP	

Mostly, people focus on exclusive reactions. However, we invite other interests and theorists to join too.

# A few examples

*eA study group*

## Low energy photons in BO

*27 June 2023*

Zvi Citron, Eden Mautner, Michael Pitt

אוניברסיטת בן-גוריון בנגב  
جامعة بن غوريون في النقب  
Ben-Gurion University of the Negev



27 June 2023

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27 June 2023

## Incoherent $J/\psi$ Production

Zvi Citron, Michael Pitt, Eden Mautner

eA Study Meeting  
BGU RHI Group

30.5.2023



Stony Brook University



Center for Frontiers  
in Nuclear Science

## Atomic nuclei imaging at the Electron-Ion Collider with the ePIC experiment

Niseem Magdy

[nisecmm@gmail.com](mailto:nisecmm@gmail.com)  
Inspire-hep: 1305036  
ORCID: 0000-0002-6458-6552

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# A few examples

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## Low energy photons in BO

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ePIC analysis tools brainstorming

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**ePIC analysis tools**

eA study group discussion, May 23 2023

General discussions:

**What should be analysis tools and what should not?**

Should standard packages, for example, reconstruction of V0s, be analysis tools?

**Bill:** two kinds of styles for JLab analyses. One is more of a one-time analysis tool, but the other is more collaborative. Data, coordinate transformation. Tools to understand what the data is.

**Peter:** in ATLAS, "recommendation" is the term for recommending some standard algos. Benefits for internal reviews, efficient.

**Niv:** Phenix, starting scripts, a few different kinds; Modularity. Calibration table, updated.. Plot making tools. Style guide. Flow chart visualization.

**Niseem:** Tutorial→ should not limit how the analysis is done. Data preservation.

**What must have:**

Kong: a starting script to provide a useful skeleton and template to start analysis with.

**DEMP Generator**

April 25th, 2023

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Stony Brook University

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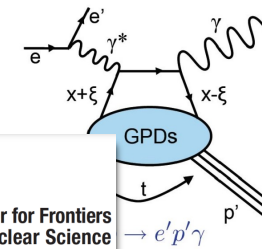
Niseem Magdy

[niseemm@gmail.com](mailto:niseemm@gmail.com)  
Inspire-hep: 1305036  
ORCID: 0000-0002-6458-6552

In collaboration with M. Hentschinski, K. Kutak, D. Kharzeev.  
<https://arxiv.org/abs/2305.03069>

## Entanglement entropy in diffractive DIS at HERA using H1 detector

Kong Tu  
BNL  
05.16.2023



## A first look into DVCS analysis with EPIC detector

Niveditha  
09-May-2023

# Summary

It's been only for a few months; **I think it's been successful and productive.** Many more analyses are coming.

*Rome wasn't built in a day;* building an active community is the key.

You, your students/postdocs, or your supervisors are all welcomed to join.