

Closing Final Remarks

Kyungseon Joo
University of Connecticut

June 1 - 4, 2021



New CLAS Chair

- Silvia Niccolai is our new CLAS Chair.

Next Collaboration Meeting

- The next collaboration meeting dates will be announced soon after consulting new Chair

PAC49

- PAC49 will be virtually held on July 19 - 23, 2021

SIDIS Experiments with A=3 Nuclei using CLAS12

Spokespeople: D. Dutta, D. Gaskell, O. Hen, D. Meekins, D. Nguyen, L. Weinstein, J.R. West, Z.H. Ye

Credit: Z. Ye

- Study Flavor-Dependent EMC Effect in A=3 by measuring SIDIS ratios of ${}^3\text{He}$ and ${}^3\text{H}$ ($e, e'\pi^+$) and ($e, e'\pi^-$)

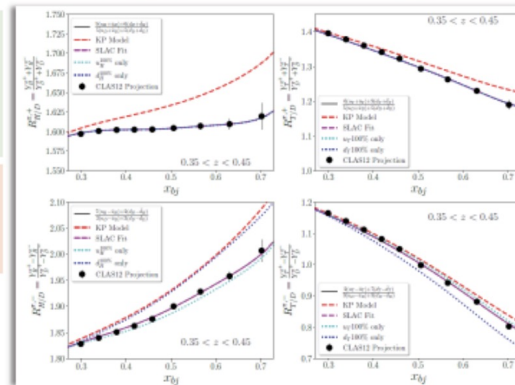
- In $Z \neq N$ different medium effect on u- & d-quark?
 - ✓ If $N > Z$, u-quark is more “bound” $\rightarrow {}^3\text{H}$
 - ✓ If $N < Z$, d-quark is more “bound” $\rightarrow {}^3\text{He}$

I. Cloet, et al, PRL 109, 182301 (2012); PRL 102, 252301 (2009)]

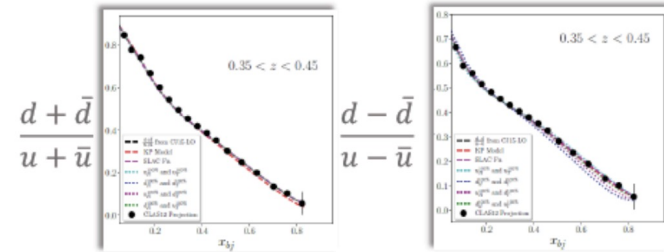
$$R_{A_1/A_2}^{\pi,\pm}(x, z) = \frac{4(u_{A_1} \pm \bar{u}_{A_1}) \pm (d_{A_1} \pm \bar{d}_{A_1})}{4(u_{A_2} \pm \bar{u}_{A_2}) \pm (d_{A_2} \pm \bar{d}_{A_2})} \cdot \frac{D_{A_1}^{fav} \pm D_{A_1}^{unfav}}{D_{A_2}^{fav} \pm D_{A_2}^{unfav}} = A_{A_1/A_2}^{\pi,\pm}(x) \cdot B_{A_1/A_2}^{\pi,\pm}(z)$$

- ✓ Probe the iso-spin dependence of the EMC effect
- ✓ Directly study the EMC effects of u- and d-quarks in A=3

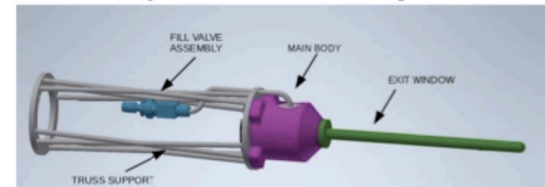
- ✓ Fragmentation Functions (FFs) should be small and largely cancel in ratios



- Directly probe d/u ratios at large-x:



- Precision Measurements of the A=3 TMDs and FFs in 4D (Q^2, x, z, p_T) binning
- Study Strangeness Contents in A=3 with kaons (if RICH)
- Experimental Settings:
 - ✓ Standard CLAS12 Configuration
 - ✓ Same target system in Tritium-SRC (E12-20-005)
 - ✓ 50 days of physics (D2, H3 and He3), 8 days calibration runs
 - ✓ Reverse magnetic fields to reduce acceptance effects



CLAS12 Run Scheduling

- Saturday Oct 16 2021: last HPS day; RG-M installation (3 days); Wed Oct 20 start RG-M 6.0 GeV (~200 nA)

RG-M: 31/45 PAC DAYS

67	10/13/21	Wednesday	1.82	Physics	E12-09-019	5.56/40/-/500	Run Group I	3.7/200/-/500
68	10/14/21	Thursday	1.82	Physics	E12-09-019	5.56/40/-/500	Run Group I	3.7/200/-/500
69	10/15/21	Friday	1.82	Physics	E12-09-019	5.56/40/-/500	Run Group I	3.7/200/-/500
70	10/16/21	Saturday	1.82	Physics	E12-09-019	5.56/40/-/500	Run Group I	3.7/200/-/500
71	10/17/21	Sunday		Reconfigure			Install Run Group M	
72	10/18/21	Monday		Reconfigure			Install Run Group M	
73	10/19/21	Tuesday		Reconfigure			Install Run Group M	
74	10/20/21	Wednesday	1.96	Physics	E12-09-019	4.0/40 4.0/40/-/500	Run Group M	6.0/200/-/500

- Thursday Dec 9 2021: pass change RG-M 2.1 GeV (~200 nA); Tuesday Dec 14: pass change RG-M 4.0 GeV (~200 nA)

120	12/05/21	Sunday	1.96	Physics	Sched. Contingency		Run Group M	6.0/200/-/500
121	12/06/21	Monday	1.96	Physics	Sched. Contingency		Run Group M	6.0/200/-/500
122	12/07/21	Tuesday	1.96	Physics	Sched. Contingency		Run Group M	6.0/200/-/500
123	12/08/21	Wednesday	1.96	Physics	Sched. Contingency		Run Group M	6.0/200/-/500
124	12/09/21	Thursday	1.96	Physics	Sched. Contingency		PASS CHANGE	
125	12/10/21	Friday	1.96	Physics	Sched. Contingency		Run Group M	2.1/200/-/500
126	12/11/21	Saturday	1.96	Physics	Sched. Contingency		Run Group M	2.1/200/-/500
127	12/12/21	Sunday	1.96	Physics	Sched. Contingency		Run Group M	2.1/200/-/500
128	12/13/21	Monday	1.96	Physics	Sched. Contingency		Run Group M	2.1/200/-/500
129	12/14/21	Tuesday	1.96	Physics	Sched. Contingency		PASS CHANGE	
130	12/15/21	Wednesday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
131	12/16/21	Thursday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
132	12/17/21	Friday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
133	12/18/21	Saturday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
134	12/19/21	Sunday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
135	12/20/21	Monday	1.96	Physics	Sched. Contingency		Run Group M	4.0/200/-/500
136	12/21/21	Tuesday		OFF				

- Monday Dec 20 2021: last RGM day; on Tuesday Dec 21 2021: Acc OFF

RG-M starts on October 20 until December 20, 2021

Preparing for taking shifts in the upcoming CLAS12 run in the Fall 2021

- Action 1: Any collaborator who may need to take remote shifts and doesn't have two-factor authentication yet should proceed as soon as possible to request it by contacting the computer center: <https://jlab.servicenowservices.com>
 - Remote shift committee report on Friday (by S. Niccolai).
- Action2: Collaborators who will be able to take shifts in person should plan their visit to JLab early on because the process will take longer than usual due to the pandemic restrictions.
- Refer to my May 29th email for details.

Preparing for taking shifts in the upcoming CLAS12 run in the Fall 2021

- Due to the Jlab rules, **ALL visitors (including US citizens)** have to be registered at least 7 DAYS BEFORE THE ONSITE ARRIVAL START DATE. Please read carefully the note https://www.jlab.org/human_resources/jris/processing and check the following site:
 - Registration site: <https://misportal.jlab.org/jlabAccess/>
 - Overview of the electronic access process: <https://www.jlab.org/hr/jris/ElectronicAccessProcess.pdf>
 - Checking the status of a Registration form: <https://www.jlab.org/hr/jris/CheckingStatusRegistrations.pdf>
- Check the status of your training and prepare to renew the expired ones (see https://www.jlab.org/human_resources/training/webbasedtraining). Note that currently the Rad Worker I exam (both practice and test) can be taken by appointment only by contacting RadCon (send email to radcon_train@jlab.org to inquire)
- Upon renewal of the Rad Worker training, remember to retrieve your radiation badge or request one by contacting Becky Mosbrucker (becky@jlab.org or 757-269-7236).

Current and Future with CLAS Collaboration

- Active program with CLAS12 and CLAS6
- CLAS12 Luminosity Upgrade
- JLab Energy Upgrade
- Electron Ion Collider

Summary

- My term as CLAS chair will be until August 31, 2021
- I will work with new Chair to make a smooth transition.
- We start to see that this strange pandemic will end soon.
- Let's keep working together to advance our science.

Friday, June 4, 2021



Thank you very much for all your support

Stay safe and stay healthy!