

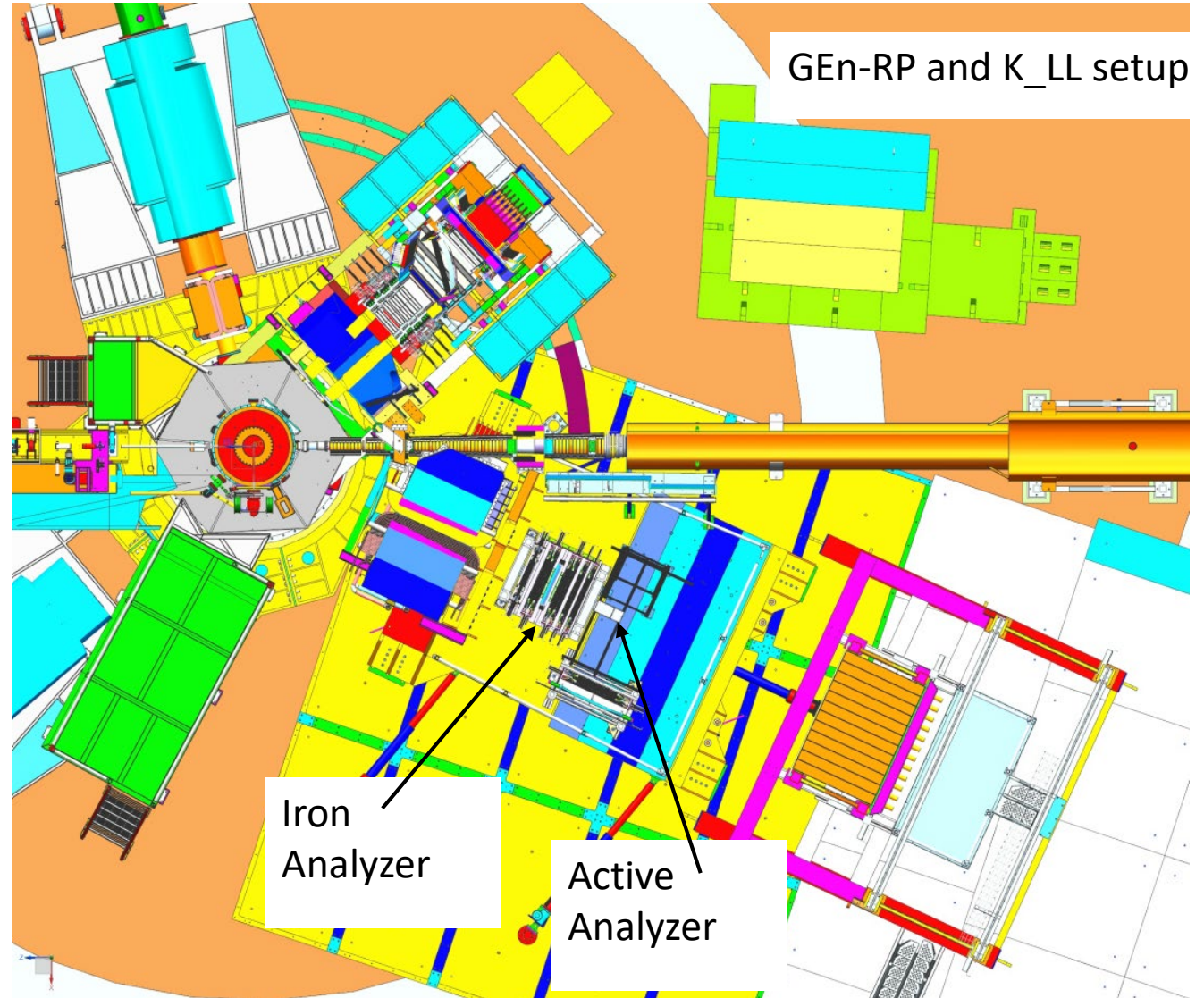
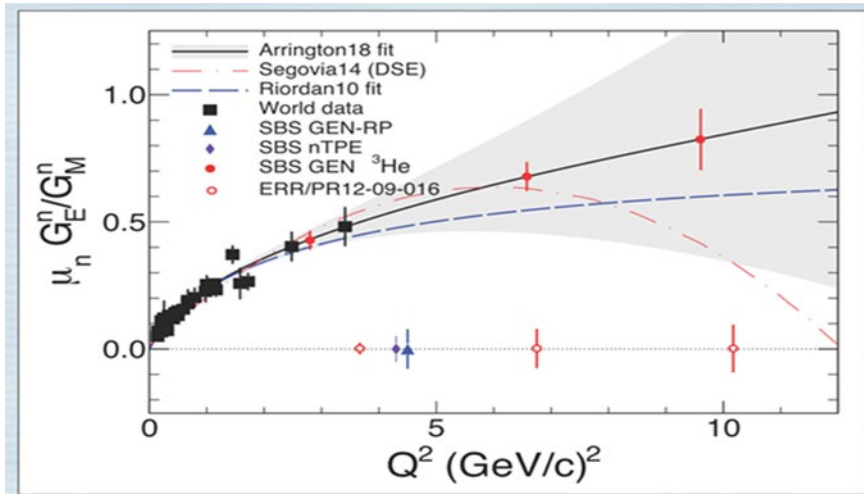
Hall A Status



June 2024 SoLID Collaboration Meeting

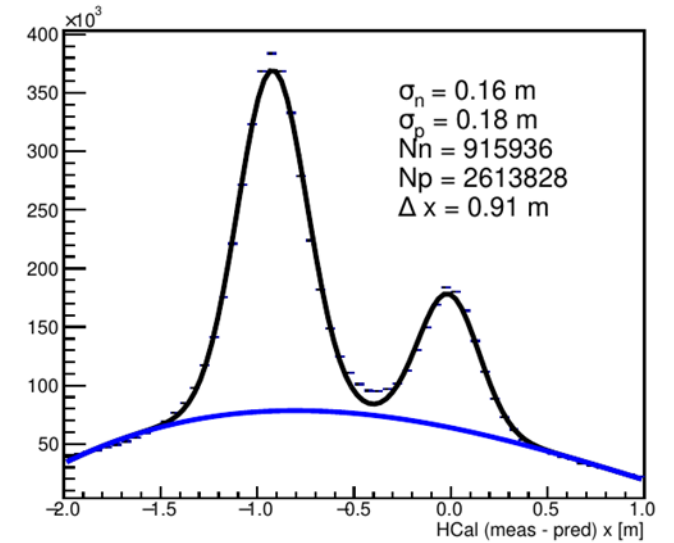
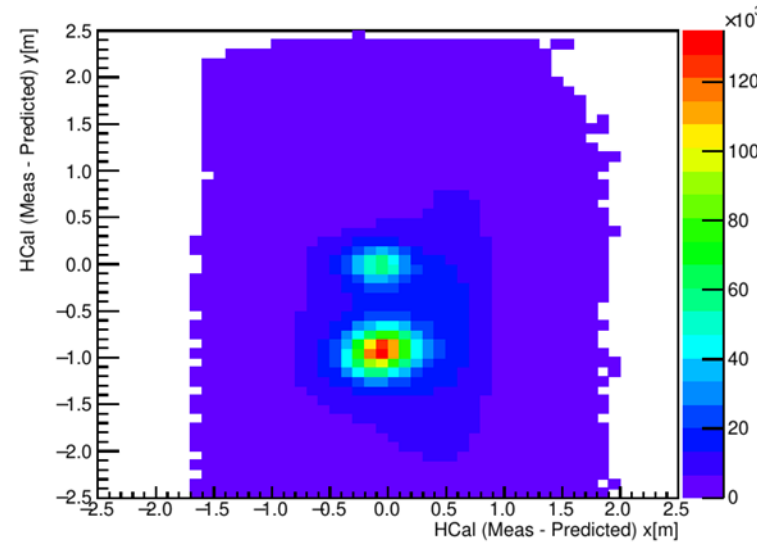
GEN-RP and K_LL in April/May 2024

- Measurement of the Ratio G_E^n/G_M^n by the Double-polarized ${}^2\text{H}(\vec{e}, e'\vec{n})$ Reaction
 - Outgoing neutron polarization measured by charge exchange with iron analyzer
 - Additional polarization measurement using the side detectors and 32 channel active analyzer
- Polarization Transfer in Wide-Angle Charged Pion Photoproduction (K_LL)

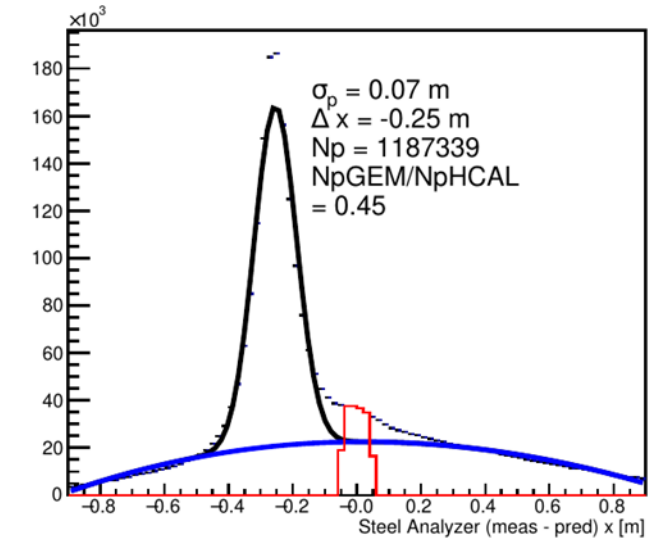
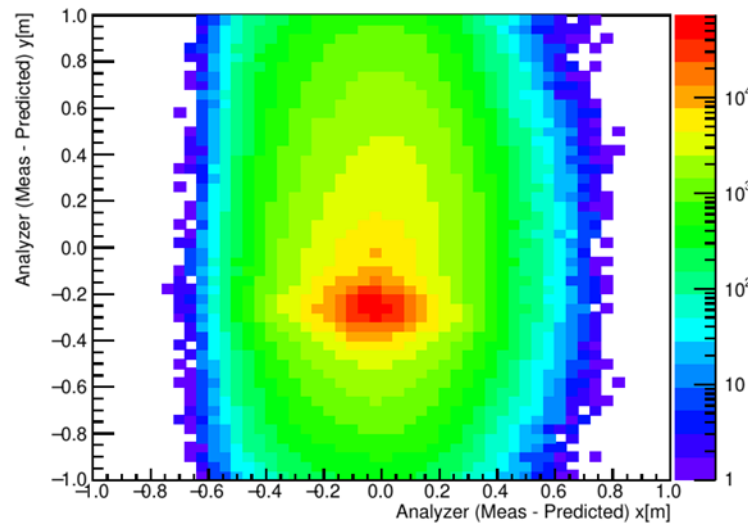


GEN-RP Identify charge exchange events

- Use BigBite to project the predicted quasielastic neutron to the HCal.
- Difference between HCal measured and predicted position

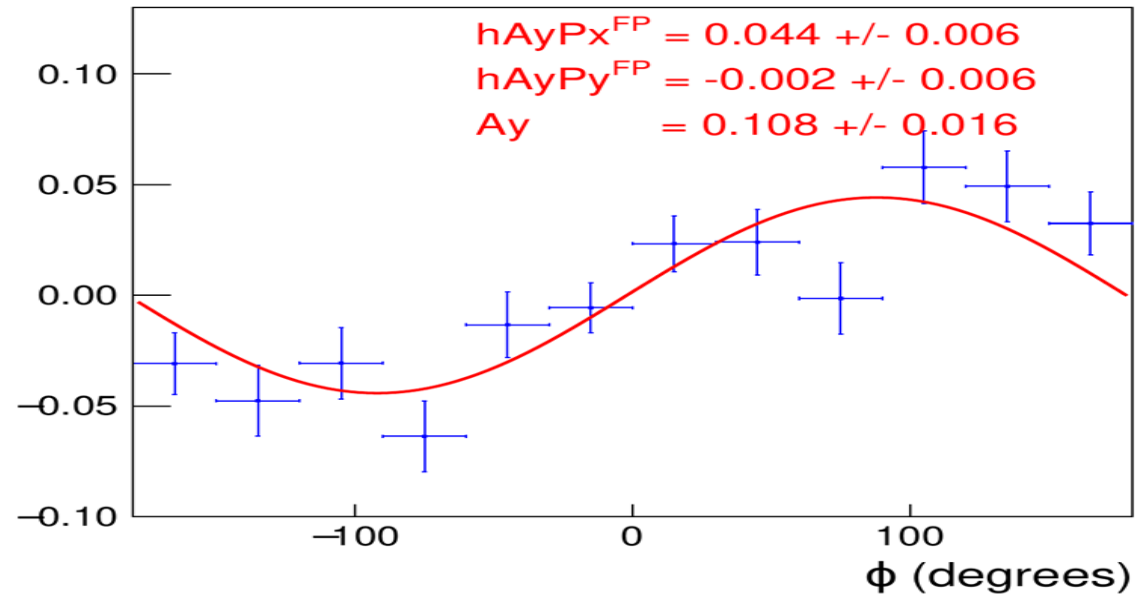
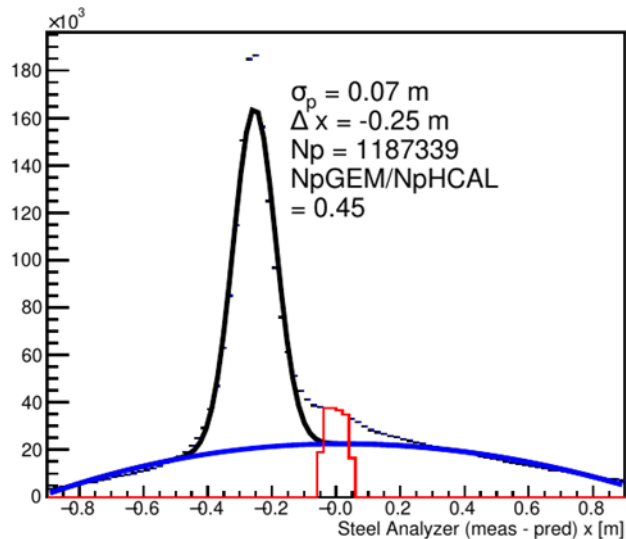
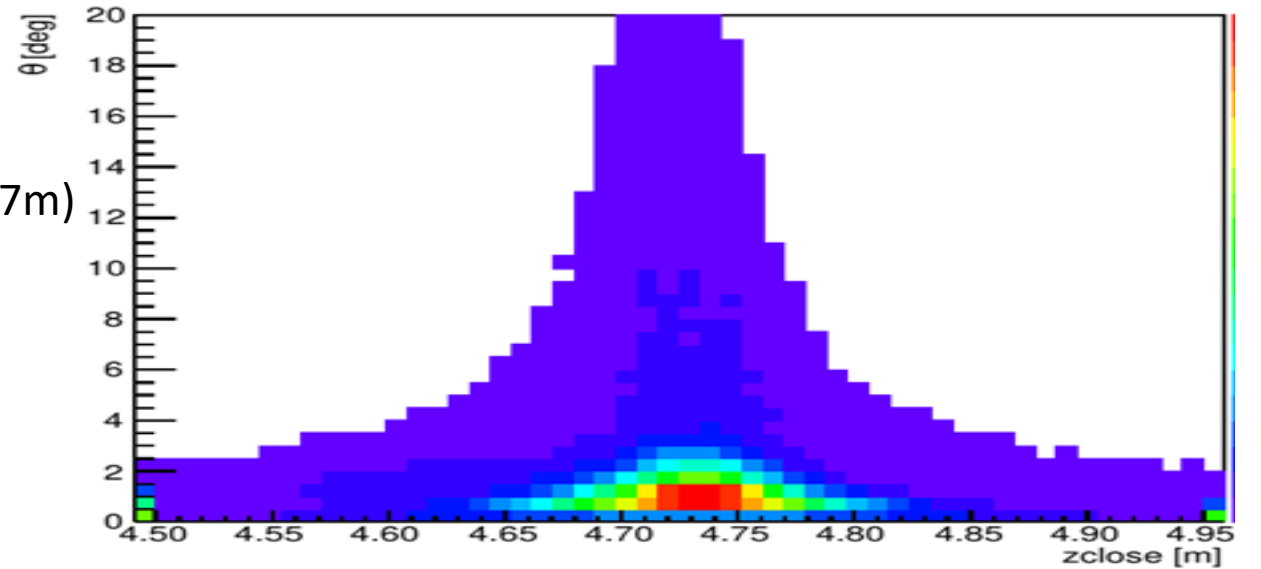


- Track in SBS GEMs
- Use BigBite to project the predicted quasielastic neutron to the Iron analyzer.
- Difference between SBS GEM Iron analyzer measured and predicted position



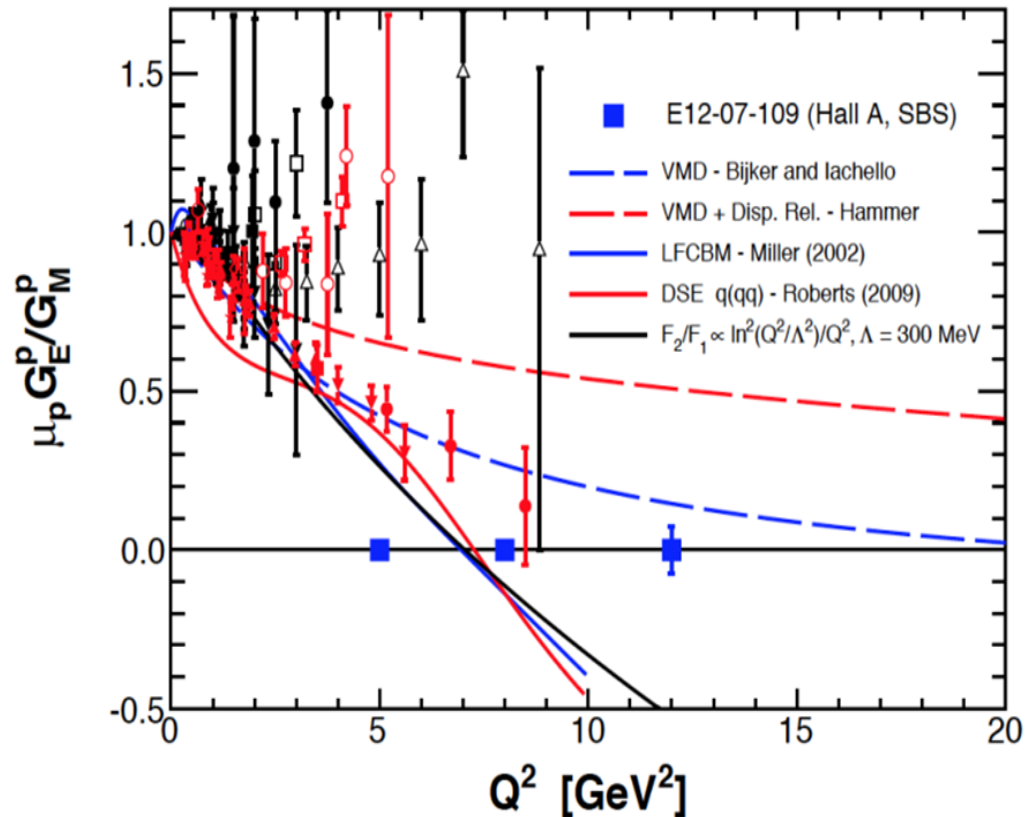
Proton Recoil nucleon polarimetry

- Select proton events
- Front and rear SBS tracks ≥ 1
- Proton dx at analyzer cut (± 3 sigma of peak at -0.27m)
- zclose < 3cm
- $\Theta_{\text{scat}} > 3$ degrees
- Online Proton Analyzing and polarization components in rough agreement with expectations



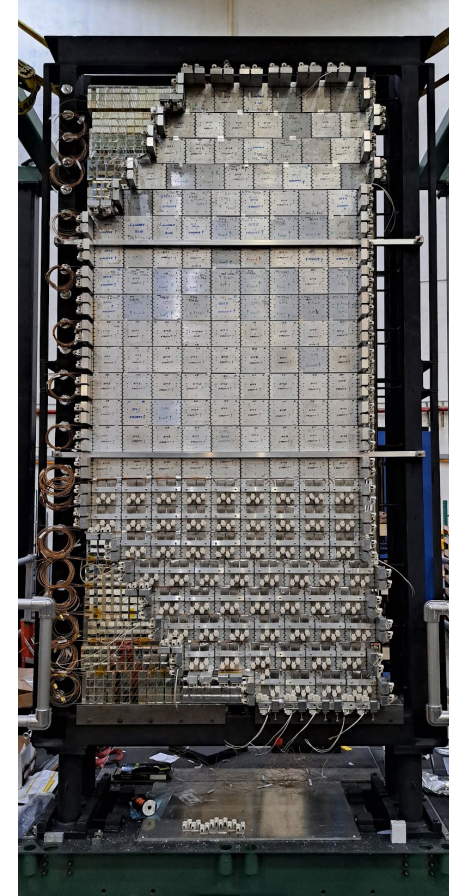
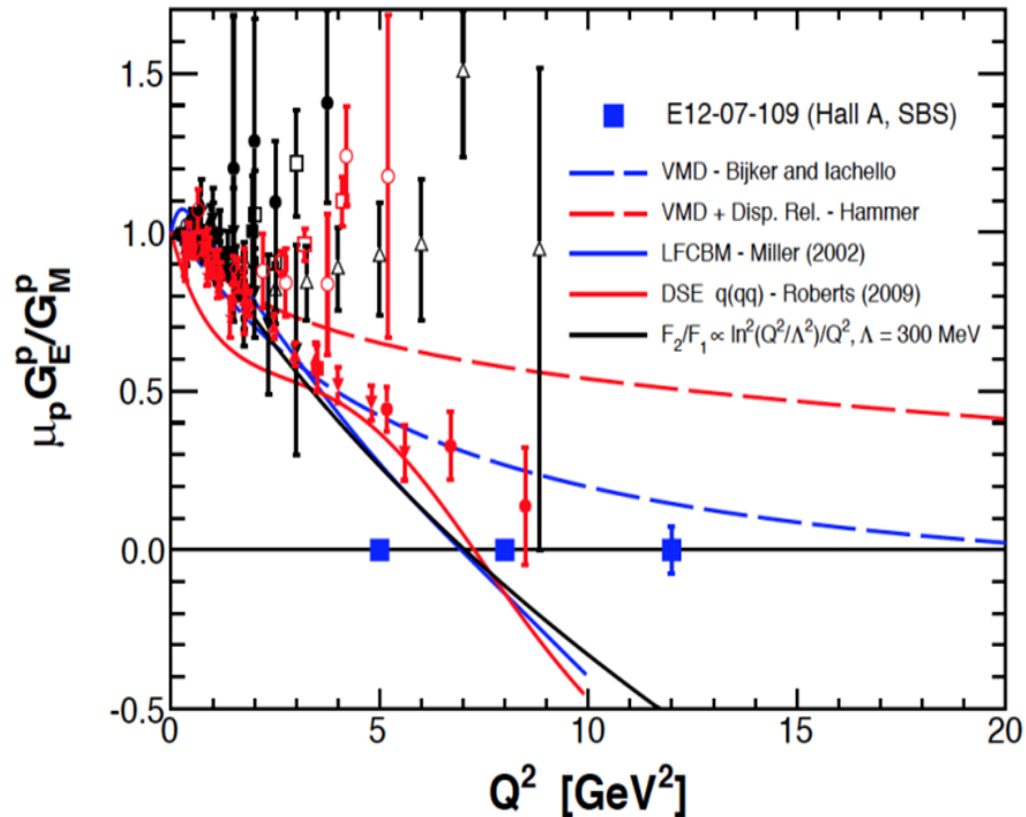
GEP experiment

- Installation began in end of May 2024
- With LOTO Pause, physics start in Late Jan 2025
- Experiment runs until June 2025
(other halls until July 2025)
- Measure to $Q^2 = 12 \text{ GeV}^2$

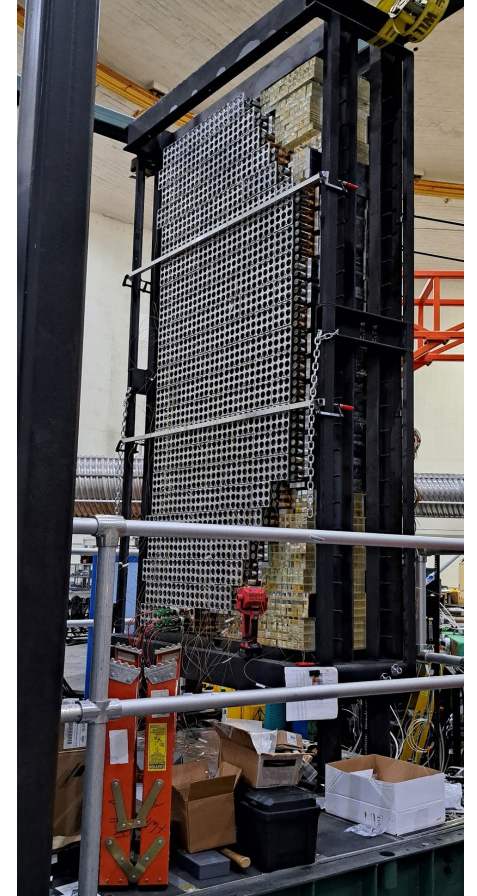


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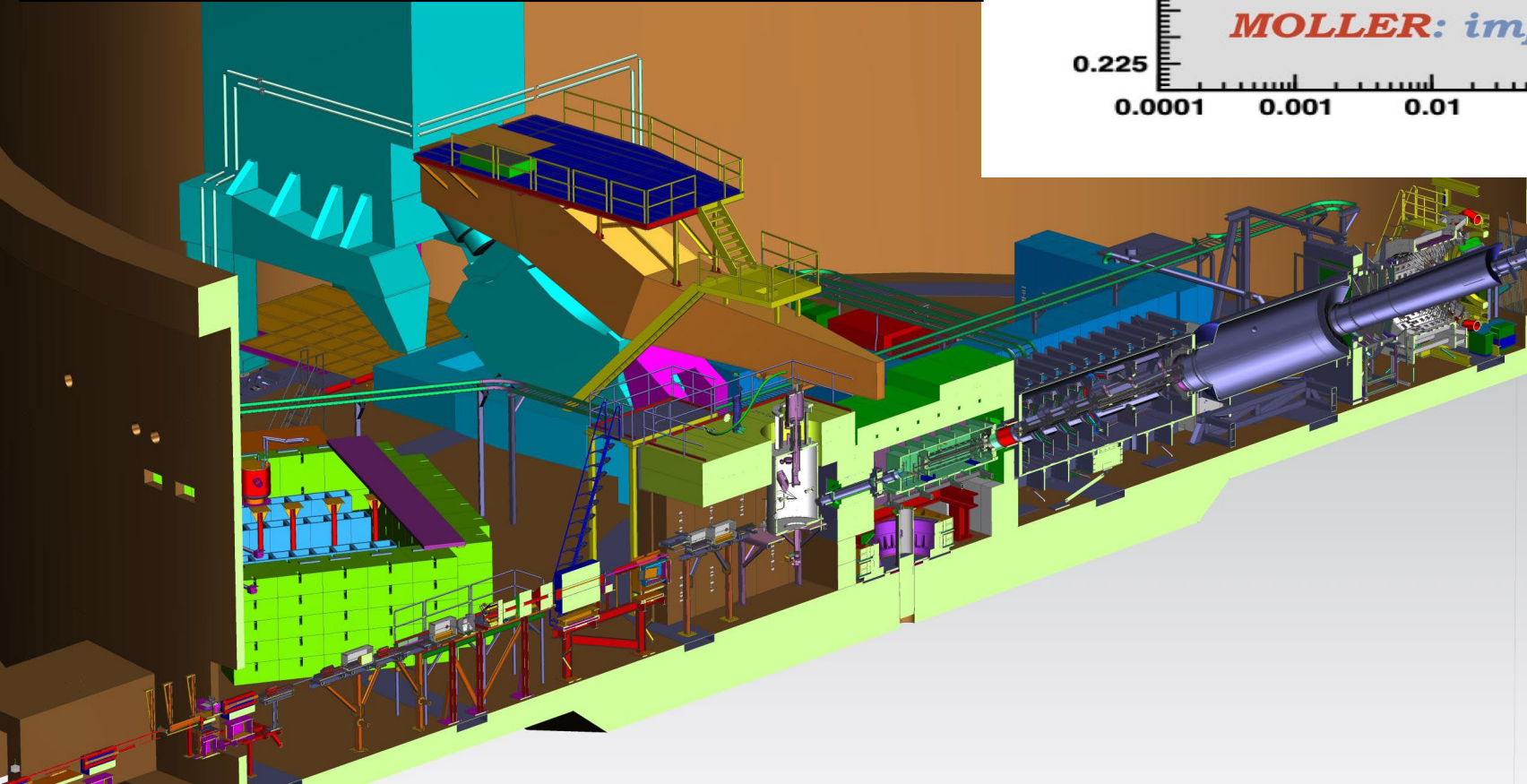
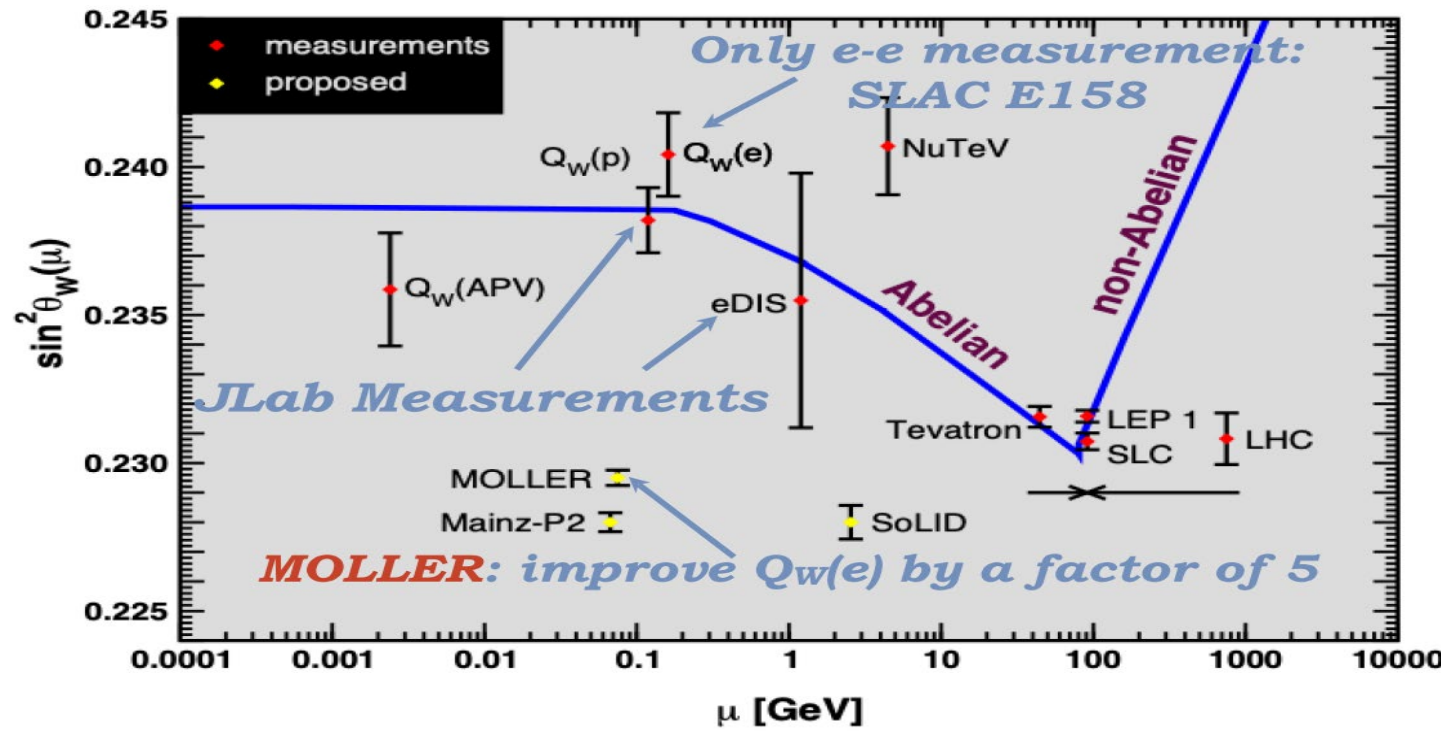
ECal Front view.
All Supermodules installed.
Installing heaters



ECal Rear view.

MOLLER Project

- Inflation Reduction Act provided full funding.
- Last year, passed CD-3A review and spending CD-3A funds.
- ESAAB Approval: MOLLER Project CD-2/3
- Installation starts in July 2025
- 3 years of running.



April 23rd, 2024

MOLLER

Magnet Group – General

❑ Engineering and Design

Daily white board meetings continuing (@0800 Hrs if you want to join in)

❑ Magnet Power Supplies

- Retest with the New DCCT mounted tested to 3900A successfully.
- Minor issues with logistics are presently been worked closely with PO and QC team (JLab and OCEM).

❑ Procurement

- Lots of CD3a stuff has come in
- 22 of 28 Production Coils for the 4 DS magnets – Final shipment mid May 2024
- All the Tungsten parts for the DS spectrometer including: Collimators 5, 6a, 6b, Photon Scraper, and support system, coil belly plates, coil Clamps for the DS magnets
- 1 of 4 magnet frames
- All the Bellows (1 has a small leak and working with procurement, the vendor and QA to resolve the non-conformance



MOLLER Space in Test Lab (April 2024)

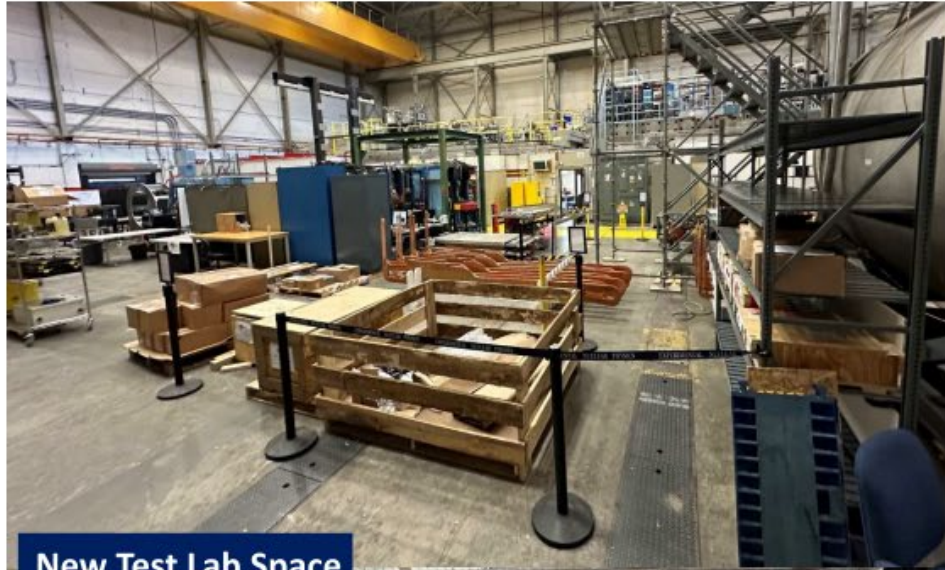
MOLLER updates

April 23rd, 2024

Jefferson Lab **MAGNET GROUP**

MOLLER

Magnet Group – Test Lab



New Test Lab Space



Pion Donut "Can"



Bellows 4

Bellows 3



TM3 Magnet Frame Fully Machined



Photographs from inside the MPS with DCCT's mounted Prototype MPS

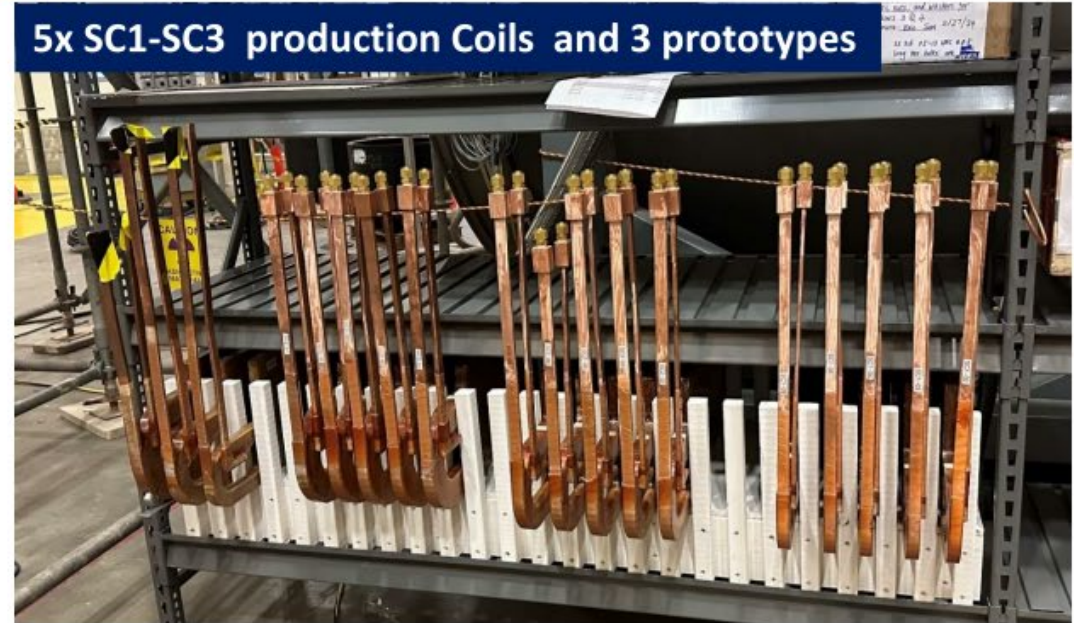
MOLLER updates

April 23rd, 2024

Jefferson Lab MAGNET GROUP

MOLLER

Magnet Group – Test lab



SoLID

- Congratulations on a successful workshop.
 - Three main pillars of SIDIS (TMD and GPD), PVDIS and J/Psi
 - Significant and growing theoretical interest in all physics areas.
 - New experimental ideas
- Recommendation #4 in the NSAC LRP
- Working towards a plan for cost sharing between JLab and the SoLID project.
 - Thanks to all that help to put together the new cost plan
- Successful beam tests have demonstrated detector readiness and reduced risk of the project.
- In the midst of capitol project for spending around \$2.2M on the SoLID DAQ components

Conclusion

- The SBS Form factor program in midst of successful run
 - Neutron magnetic form factor to $Q^2 = 13.5 \text{ GeV}^2$ completed in 2022
 - Polarized ^3He target to measure neutron electric form factor to $Q^2 = 9.9 \text{ GeV}^2$ completed in Fall 2023.
 - Recoil polarization in quasi-free $d(een)$ to measure neutron electric form factor to $Q^2 = 4.5 \text{ GeV}^2$ completed in April/May 2024.
 - GEp installation from May 2024 to late Jan 2025. Then run until June 2025.
- MOLLER
 - The CD3A spending has the spectrometer components already on site.
 - CD2/3 plan is approved and spending is moving forward.
 - The NSF and Canadian work on the detectors is in full swing.
 - Installation starts in July 2025. Roughly 18 months of installation and 3 years of running.
- SoLID
 - The future of the Hall A physics program after the MOLLER run.
 - Need to determine what other capitol projects can move forward to support SoLID.