

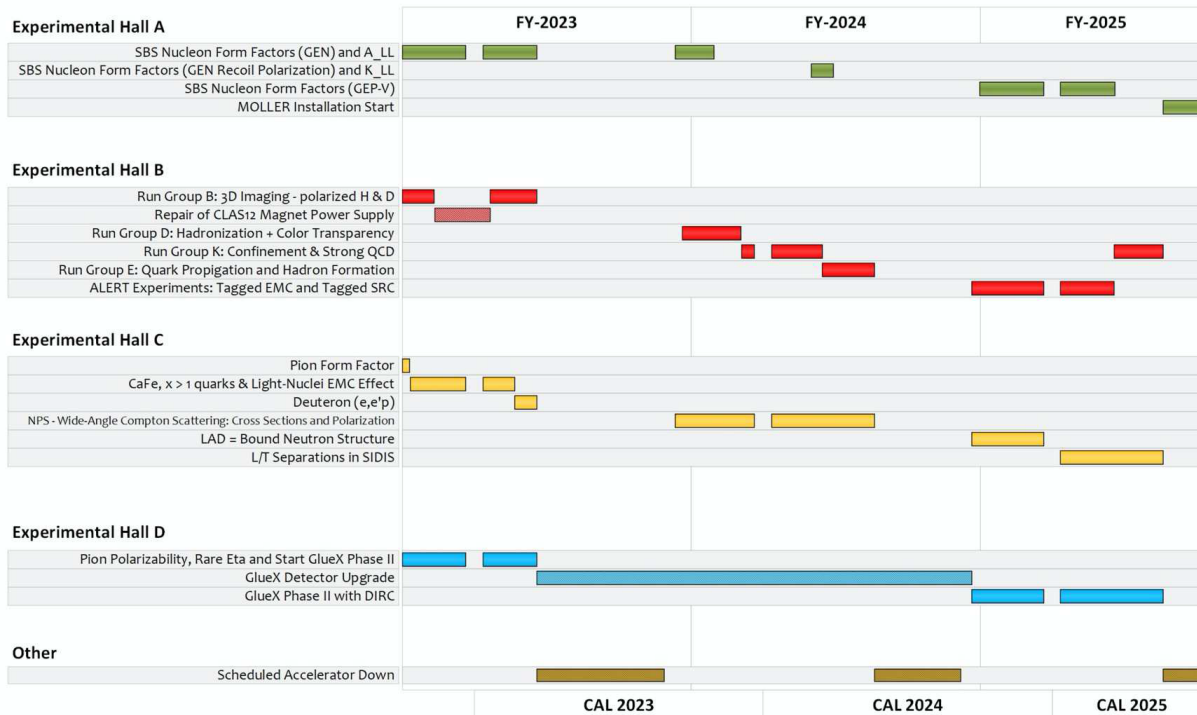
# Introduction

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- **MOLLER: Measurement Of Lepton Lepton Elastic Reactions**
- **Physics Outcome:** an ultra-precise measurement of the weak-mixing angle using Møller scattering  
<https://moller.jlab.org/cgi-bin/DocDB/public/DocumentDatabase>
- **Organization:**
  - **Accelerator Parity-Quality-Beam Liaison:** Riad Suleiman
  - **APEL:** Yves Roblin
  - **Ops Hall A Liaison:** Daniel Moser and Adam Schoene
  - **Hall A Liaison:** Ciprian Gal
  - **MOLLER Liaison:** Caryn Palatchi and Kent Paschke
  - **MOLLER PQB Meeting:** Wednesday 3-4 MCC Conf room

# CEBAF Long Term Schedule – potential conflicts

## MOLLER experiment in Hall A: installation starts in Jan 2025 and physics run starts in Jan 2026 for three years



- **Hall A (MOLLER)**

0.26 pC @ 249.5 MHz (4 ns, 65 μA average beam current)

- **Hall B**

0.002 pC @ 249.5 MHz (4 ns, 50 nA average beam current)

- **Hall C**

0.12 pC @ 249.5 MHz (4 ns, 35 μA average beam current)

- **Hall D (K<sub>L</sub>)**

0.32 pC @ 15.6 MHz (64 ns, 5 μA average beam current)

➤ **One task aims to study co-operation of MOLLER with K-long experiment in Hall D**

# MOLLER Requirements

- Details about MOLLER action items can be found here:  
[https://wiki.jlab.org/ciswiki/images/2/2b/MOLLER\\_Accelerator\\_MainJobs\\_details\\_June2023.docx](https://wiki.jlab.org/ciswiki/images/2/2b/MOLLER_Accelerator_MainJobs_details_June2023.docx)
- MOLLER has other requirements that can be found here:  
[https://wiki.jlab.org/ciswiki/images/7/7b/MOLLER\\_beam\\_requirements\\_22March2023.pdf](https://wiki.jlab.org/ciswiki/images/7/7b/MOLLER_beam_requirements_22March2023.pdf)
- Accelerator jobs are summarized in next four slides (**listed are Deliverable Dates**)

| Abbreviation     | Staff/People | Group                                       |
|------------------|--------------|---|
| CIS              | Accelerator  | Center for Injectors and Sources            |
| CASA             | Accelerator  | Center for Advanced Studies of Accelerators |
| Ops-SW           | Accelerator  | Accelerator software Group                  |
| Ops-Inj          | Accelerator  | Injector group                              |
| Ops-MCC          | Accelerator  | MCC Operations Group                        |
| I&C              | Engineering  | Instrumentation and Controls Group (EESICS) |
| SSG              | Engineering  | Safety Systems Group                        |
| Fast Electronics | Physics      | Fast Electronics Group                      |
| Hall A           | Physics      | Hall A group                                |
| RCG              | EH&S         | Radiological Control Group                  |
| MOLLER           | Users        | MOLLER Collaboration                        |

# MOLLER Accelerator Jobs

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- 1. Helicity Generator boards (SAD 2024)**
  - Groups (CIS, MOLLER, Fast Electronics, Ops-SW)
- 2. Helicity Decoder boards (SAD 2024)**
  - Groups (CIS, MOLLER, Fast Electronics)
- 3. New RTP High Voltage (HV) Driver (SAD 2024)**
  - Groups (CIS, MOLLER, I&C, Ops-SW)
- 4. Upgrade Intensity-Attenuator (IA) system (December 2024)**
  - Groups (CIS, MOLLER, I&C, Ops-SW)
- 5. Upgrade Helicity Magnets control (December 2024)**
  - Groups (CIS, CASA, MOLLER, I&C, Ops-SW)
- 6. Feedback on polarization orientation (December 2024)**
  - Groups (CIS, Ops-Inj, MOLLER, CASA)
- 7. Wien filters slow reversal – Wien Flip (December 2023)**
  - Groups (Ops-Inj, CIS, MOLLER)

# MOLLER Accelerator Jobs ... continued

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- 8. Injector transmission and parity-quality beam (December 2023)**
  - Groups (Ops-Inj, CIS, MOLLER)
- 9. Matching and adiabatic damping from 200 keV to Hall A (December 2024)**
  - Groups (CASA, CIS, Ops-Inj, MOLLER)
- 10. Fast Feedback (FFB) system resurrection (December 2024)**
  - Groups (CASA, Ops-SW, I&C)
- 11. Compton Polarimeter setup (December 2024)**
  - Groups (CASA, Hall A)
- 12. Beam Modulation (December 2024)**
  - Groups (Hall A, CASA, Ops-SW, I&C, MOLLER)
- 13. Phase Advance (December 2024):**
  - Groups (CASA, MOLLER)

# MOLLER Accelerator Jobs ... continued

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## **14. Study co-operation of MOLLER with K-long experiment in Hall D (SAD 2024)**

- Groups (CIS, Ops-Inj, CASA, MOLLER, Hall A)

## **15. Control of charge asymmetry on Halls B, C, and D beams (December 2024)**

- Groups (MOLLER, CIS, Ops-SW)

## **16. Parity-Quality Beam (PQB) studies in Injector and Hall (December 2024)**

- Groups (MOLLER, CIS, Ops-Inj, CASA)

## **17. Halo Monitors in Hall A (March 2025)**

- Groups (Hall A, MOLLER, I&C, Ops-SW, SSG)

## **18. Robust beam mis-steer protection / fast shutdown detectors in MOLLER apparatus (March 2025)**

- Groups (Hall A, MOLLER, RCG, SSG, Ops-MCC)

# MOLLER Accelerator Jobs ... continued

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## **19. New BPM Digital Receivers in Hall A line – instead of Sample/Hold cards (March 2025)**

- Groups (Hall A, MOLLER, I&C, Ops-SW)

## **20. New BCMs electronics in Hall A line (March 2025)**

- Groups (Hall A, MOLLER, I&C, Ops-SW)