Introduction

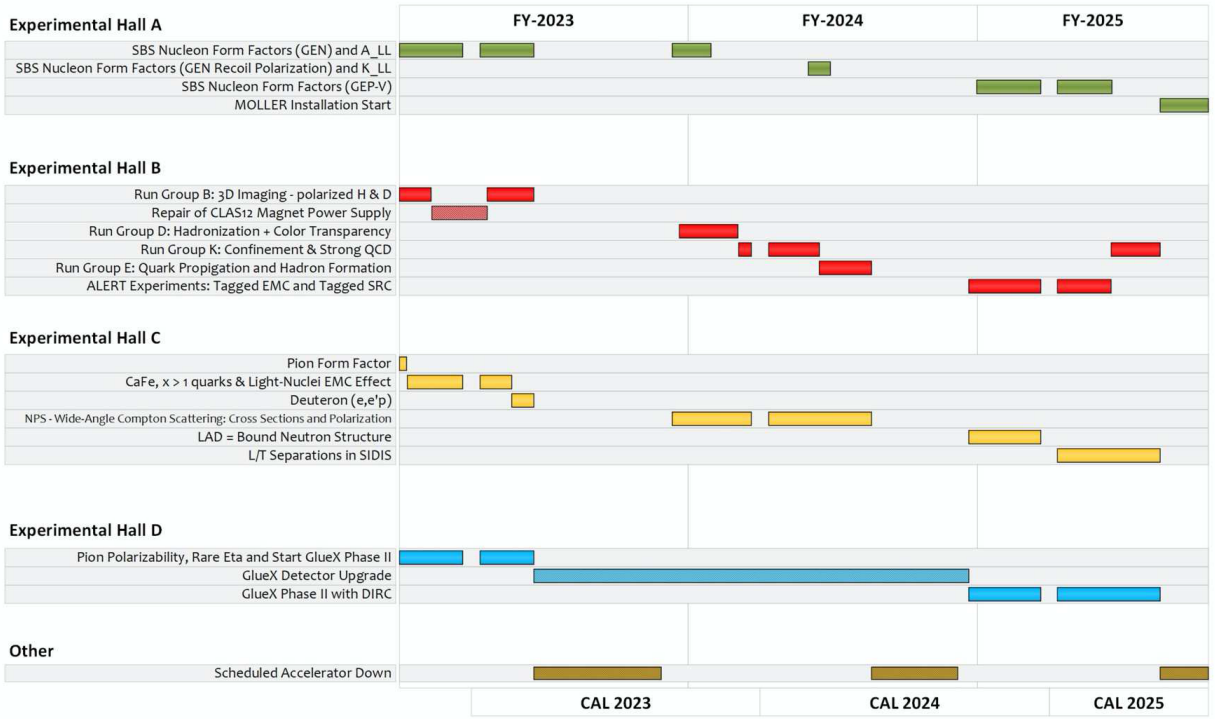
- **MOLLER: M**easurement **O**f **L**epton **L**epton **E**lastic **R**eactions

- **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

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_L)**

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

- MOLLER has other requirements that can be found here: 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)
RF	Engineering	Radio-Frequency Group
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

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

8. **Injector transmission and parity-quality beam (December 2023)**
   - Groups (Ops-Inj, 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

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, RadCon, Ops-MCC)

MOLLER Accelerator Jobs … continued

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)