Hall C Status

Mark Jones, June 3 2026
Tensor Group Collaboration Meeting

Hall C Running in 2026

- Accelerator started at low pass energy of 345 per linac for compatibility w/PRAD
  - E12-22-001: N-Δ at low Q^2
  - E12-23-001: VCS at low Q^2, 15 of 61 PAC days
- Two weeks for accelerator changeover to standard beam energies
  - Switchover is June 1 to June 12.
  - E12-06-104/E12-24-001: R-SIDIS (Part 2).
  - E12-06-107: Color Transparency via exclusive pion electroproduction.
  - Run period ends on Aug 31st 2026. Hard cut-off date.
- Testing of GEMs at high luminosity will be done parasitically during the run period.

Near future Hall C schedule *(Planning and Drafting stage)*

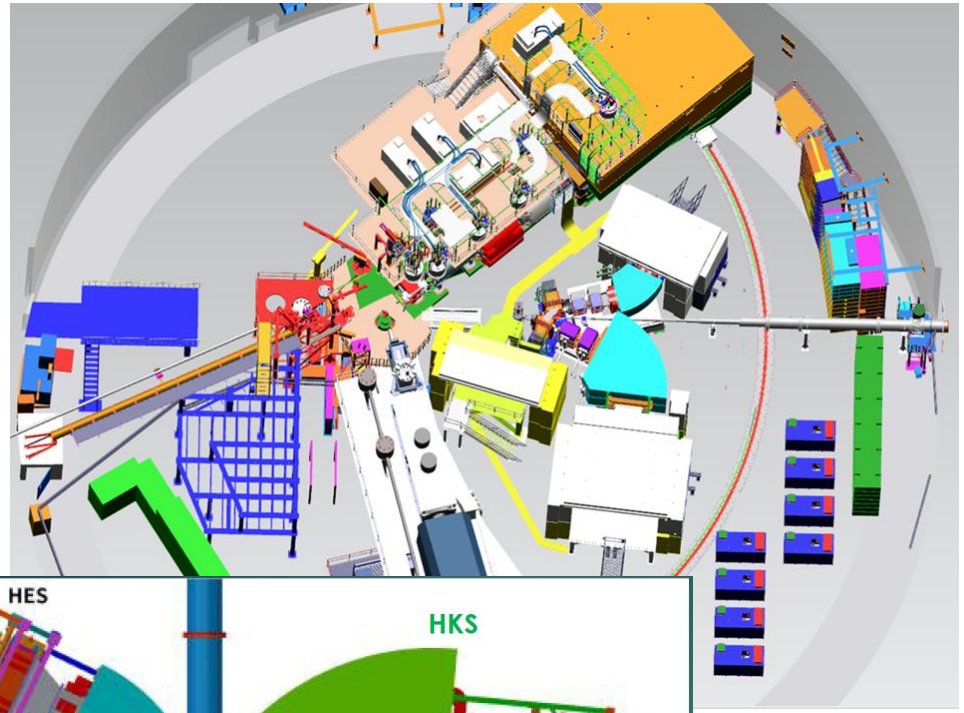
- Sept 1,2026 to Jan 20, 2027 Scheduled Accelerator Maintenance (SAM)
  - Facilities scheduled to replace central air handling unit.
  - Target change out
  - Install detectors in SHMS for E12-24-007 (Elastic A_T on nuclei)
- Jan 20, 2027 to Sept 1 2027 (Tentative 32 week schedule)
  - Low energy running (~1.1 GeV/pass) from Jan 20- Mar 1, 2027
    - E12-24-007 (Elastic AT on nuclei), R-DIS (E12-14-002), KAON LT (E12-09-011)
  - High energy running (~2.2 GeV/pass) from Mar 14 to Sept 1 2027
    - VCS (E12-23-001), R-DIS (E12-14-002), KAON LT (E12-09-011), E12-20-007, E12-25-007
- Sept 1 2027 to Jan 20 2029 (~ 16 months)
  - Install Hypernuclear experiments
  - Run Hall A,B and D from Jan 20 to Sept 1 2028

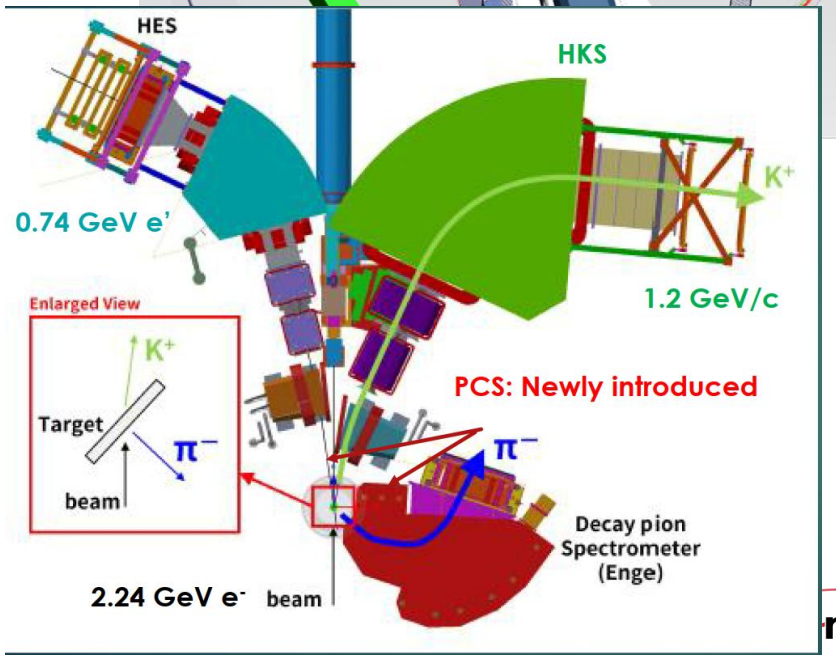
Hypernuclear experiments

- Experiments had ERR in Nov 2024.
- Experiment PAC days. Total 149 PAC days. Assuming 50% efficiency that is 42 weeks. Two run periods.
- Funding for the new equipment is from COPS and Capitol project.

Experiment	Title	PAC Days
E12-23-013	An isospin dependence study of the Lambda-N interaction through the high precision spectroscopy of Lambda hypernuclei	55
E12-24-011	Study of a triaxially deformed nucleus using a Lambda particle as a probe	28
E12-24-003	Studying Lambda interactions in nuclear matter with the ^{208}Pb(e,e' K+)$^{208}{}_{\Lambda}$Tl reaction	42
E12-24-004	Study of charge symmetry breaking in p-shell hypernuclei	24
Run Group	High-resolution spectroscopy of light hypernuclei with the decay-pion spectroscopy (ENGE magnet)	N/A

- MOLLER will be running in Hall A during the time that Hypernuclear experiments would run





Future Hall C schedule (speculative)

- Jan 20th – Sept 1st 2029
  - Run 32 weeks of Hypernuclear experiments.
- Jan 20th - Mar 31st 2030
  - Run 10 weeks of Hypernuclear experiments.
- April 2030 – mid March 2031
  - Deinstallation of Hypernuclear
  - Installation of tensor polarized target.
- Mid March 2031 – Sept 2031
  - Run E12-13-011 ,"The Deuteron Tensor Structure Function b1", 41 PAC days
  - Run E12-15-005, "Measurements of the Quasi-Elastic and Elastic Deuteron Tensor Asymmetries", 45 PAC days.
- Sept 2031- Jan 2032
  - Install beamline for transversely polarized proton target
- Jan 2032- March 2032
  - Run E12-24-002, "Revealing the Transition Region of QCD with the Proton's g2 structure function" , 26 PAC days.

Moving forward

- Physics division liaison, Arun Tadepalli.
- Need to set out space in the TestLab Hibay for reviving the old Hall C polarized target operational.
  - Need to develop a plan with UNH. Allison Zec, Hall A/C postdoc, and Hall C techs can work on this.
- Spring 2027, have a Hall C and Target group review of what is needed for the tensor polarized target experiments:
  - Status of equipment and procurements
    - Upstream polarized target beam girder
    - Slow raster
    - Faraday Cup/Low Current BCM Calibration system
    - Polarized tensor target
  - Timeline to be prepared for ERR in 2028
- Fall 2027, have a Hall C and Target group review of what is needed for the transverse polarized hydrogen target
  - Status of equipment and procurements
    - Magnets for the beam chicane.
    - Transverse polarized hydrogen target