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Hall A Update

Thia Keppel

SoLID Collaboration Meeting October 2017



Hall A Projected Experiment Schedule, 6/2017 (last SoLID meeting)



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Hall A Projected Experiment Schedule, current (also see

https://www.jlab.org/exp_prog/experiment_schedule/2017/20170914.1_ExpSch.pdf *thrOugh* 12/18)







Jefferson Lab Experiment E12-14-012

A measurement of the Argon spectral function

Collaboration of 31 physicists, from 8 institutions, based in USA, Europe and Japan Spokesman: O. Benhar (INFN), D. Day (UVA), D. Higinbotham (JLAB), C. Mariani (VT)

Data MC Yfoc 0.04F Xfoc Data Xp_focal Xfoc MC Data Yp_focal 0.04 0.02 0.00 -0.02 Yfoc Simulation Data

Fundamental nuclear physics

observable critical to new generations of neutrino experiments such as DUNE and MicroBooNE

A **multi-disciplinary** effort that promotes a synergy between nuclear theorist and experimentalists and neutrino physicists.

Approved in July 2014 Scientific Grade A-Collaboration from neutrino community Data taking started in Feb. 2017 Data taking completed Mar. 2017 *First publication expected Fall 2017*

Tritium Experiment Group Preparations

- Five experiments approved by PAC 42, <u>3</u> "high impact"
- (Many!) graduate students on site
- Preparations currently underway
 - ✓ Vent system
 - Target and safety systems
 - ✓ Scattering chamber
 - Target installation platform
 - Final ERR walkthrough
 November 2017









SBS

✓ SBS Project successfully completed *June 2017*

✓ Closeout document:

- "The panel finds that the SBS project has achieved all project technical baseline and performance specifications."
- "As noted in previous review summaries, it is highly commendable that the base WBS projects were accomplished <u>on time and</u> <u>budget</u>."
- "In addition, some variants to the original planning were included.....which enhanced the capability of the base project."
- The panel looks forward to seeing these components being put on the floor for final commissioning to enable the start of an exciting SBS physics program.
- ✓ Successful G_Mⁿ Experimental Readiness Review June 2017





SBS: All Major Components Now at JLab



Counterweight on floor plates





GEM BT 3x50x40 cm² modules



Jefferson Lab



MOLLER

- 2009: Approved by PAC
- 2010: Assigned A rating and awarded full beam time request of 344 PAC days
- 2010: Director's Review (Chair: Charles Prescott), Strong Endorsement
- 2011: Jefferson Lab submitted MIE Proposal to DOE NP
- 2014: DOE Science Review, Strong Endorsement
 - ✓ Backgrounds and Radiative Corrections reports submitted
- December 2016: Director's Technical Cost and Schedule Review
 - "scientific case ... remains as strong as ever", "...Committee finds that the substantial progress since the last Director's Review suggests that the experiment is ready to move to the next stage"
- December 2016: CD-0 achieved on Dec. 21, 2016 with caveat that project is "paused"
- 2015 2017 ...: Ongoing Investigations
 - Spectrometer magnet and collimator systems baseline design, coil proto-typing
 - Radiation shielding optimization and further detector development (UVA)
 - Parity quality beam working group with parasitic studies (R. Suleiman, lead)
 - Target development (Silviu Covrig DOE Early Career Award Recipient)
 - Work proceeding to address recommendations from 12/16 Director's Review
 - Pre-R&D continues to refine design choices and reduce risk





SoLID Timeline Overview Proposed QCD & Fundamental Symmetries MIE



Unique Capability:

- ✓ High luminosity (10³⁷⁻³⁹)
- \checkmark Large acceptance detector with full ϕ coverage

	ltem	Date
	Director's Review	February 2015
	SoLID User Meeting with DOE/NP	November 2015
	Director's Review Recommendations affecting science reach; progress: simulations of core measurements, DAQ rate capability, detector/magnet integration	February 2016
	CLEO-II Magnet Disassembly at CESR	Summer 2016
	Follow-Up Director's Review	Late 2016
	Draft MIE Submission – proposed	February 2017
	DOE/NP-led Science Review – proposed	Spring 2017
	Annual Budget Briefing – proposed budget profile	February 2018
	MIE Start - proposed	FY2020

SoLID (JLab) Activities

- Engineering and design (see Whit's talk)
- Magnetic field analysis (see Jay's talk)
- Data acquisition (see Alex's talk)
- Polarized ³He target development
- Polarimetry
- Regular parity quality beam meetings





- Management support
 - Monthly phone meeting
 - JP!





See JPs Status Talk....

- Looked at prioritizing recommendations from Director's Review aimed at CD-1...
- Lab Goals this year:
- J/S 11. Develop an overall R&D plan for the project with a timeline.
- J/D 18. The Committee strongly recommends testing the CLEO magnet coils (cold test), power supply and controls, before installation in Hall A.
- J 19. A new magnet power supply should be included in the total cost of SoLID.
- S/J 22. The implications of the need for these resources in the context of availability of resources at the laboratory need to be understood.
- S/J 23. Closer communication with the other JLab experiments and the JLab computing center is strongly encouraged.
- **S/J** 28. Redo the cost estimate using an average cost per type of resource.
- J 29. Create a high level resource loaded schedule to get a more realistic schedule,funding and resource profile. This will also allow JLab to better determine their ability to support the FTE needs.
- J/D 32. Appoint a small team to facilitate the integration planning for SoLID.
- J/D 33. The project should develop a preliminary resource loaded schedule for the installation and the corresponding space--management plan for the hall floor.
- D/J 35. The project should develop a preliminary resource loaded schedule for the installation and the corresponding space-management plan for the hall floor.





Questions?



