

Jefferson Lab PAC 48
Proposal Cover Sheet

Proposal Type: Jeopardy

Physics Category 3D structure of the hadrons

Proposal Title: CLAS12 Run-Group H: electroproduction on transversely polarized proton with CLAS12

Experiment Hall: B

Days Requested for Approval: 110

Proposal Physic Goals:

Indicate any Experiments that have physics goals similar to those in your proposal. Approved Conditionally approved, and/or Deferred Experiment(s) or proposals.

SOLID experiment

Collaboration-Approved Proposals:

If you will be running in parallel with an approved experiment, please indicate the experiment number

N/A

Collaboration-Approved Proposals:

If you will be running in parallel with an approved experiment, please indicate the experiment number

N/A

Contact Person:

Name: Marco Contalbrigo
Institution: INFN Ferrara
Address: N/A
City, State, ZIP/Country: N/A
Phone: N/A
Fax: N/A
Email: contalbrigo@fe.infn.it

Spokesperson:

Lab Resources List

JLab Proposal No. : No Data

Date: No Data

List below significant resources - both in equipment and human - that you are requesting from Jefferson Lab in support of mounting and executing the proposed experiment. Do not include item that will be routinely supplied to all running experiments such as the base equipment for the hall and technical support for routine operation, installation, and maintenance.

Major Installations:

Either your equip. or new equip requested from JLab

Transversely polarized NH₃ target

New Support Structures:

N/A

Data Aquisition/ Reduction

New Support Structures:

N/A

New Software:

N/A

Major Equipment:

Magnets:

N/A

Power Supplies:

N/A

Detectors:

Recoil detector

Electronics:

N/A

Computer Hardware

N/A

Other:

N/A

Beam Requirements List

JLab Proposal No: No Data

Hall: B

Date: No Data

Anticipated Run Date: No Data

PAC Approved Days: No Data

Contact Person: Marco Contalbrigo

Phone: N/A

Email: contalbrigo@fe.infn.it

Hall Liaison: No Data

List all combinations of anticipated targets and beam considerations required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assessment Document (RSAD) calculations that must be performed for each experiment.)

Beam Energy(MeV)	Mean Beam Current(μ A)	Polarization and Other Requirements	Est Beam-On Time(hours)	Target Materials	Target Thickness(mg/cm^2)
10600	0.002	Beam polarization~85%	2640	Polarized NH3	Density: 580 mg/cm^3

The beam energies, EBeam, available are: $E_{\text{Beam}} = N \times E_{\text{Linac}}$ where $N = 1, 2, 3, 4, \text{ or } 5$. $E_{\text{Linac}} = 800$ MeV, i.e, available EBeam are 800, 1600, 2400, 3200 and 4000 MeV. Other energies should be arranged with the hall leader before listing.

HAZARD IDENTIFICATION CHECKLIST

JLab Proposal No: No Data

Date: No Data

Check all items for which there is an anticipated need.

<p>Cryogenics</p> <p><input type="checkbox"/> Beamline Magnets</p> <p><input type="checkbox"/> Analysis Magnets</p> <p><input type="checkbox"/> Target Magnets</p> <p>Type: N/A</p> <p>Flow Rate: N/A</p> <p>Capacity: N/A</p>	<p>Electrical Equipment</p> <p><input type="checkbox"/> Cryo/Electrical Devices</p> <p><input type="checkbox"/> Capacitor Banks</p> <p><input type="checkbox"/> High Voltage</p> <p><input type="checkbox"/> Exposed Equipment</p>	<p>Radioactive Materials</p> <p>List radioactive or hazardous/toxic materials planned for use:</p> <p>N/A</p>
<p>Pressure Vessels</p> <p>Inside Diameter: 60 cm</p> <p>Operating Pressure: 10^{-6} mbar</p> <p>Window Material: Al</p> <p>Window Thickness: 30 μm</p>	<p>Flammable</p> <p>Type: N/A</p> <p>Flow Rate: N/A</p> <p>Capacity: N/A</p>	<p>Other Target Materials</p> <p><input type="checkbox"/> Beryllium</p> <p><input type="checkbox"/> Lithium</p> <p><input type="checkbox"/> Mercury</p> <p><input type="checkbox"/> Lead</p> <p><input type="checkbox"/> Tungsten</p> <p><input type="checkbox"/> Uranium</p> <p><input type="checkbox"/> Helium</p> <p>Other Target Material:</p> <p>N/A</p>
<p>Special Target Materials</p> <p><input type="checkbox"/> Helium</p> <p><input type="checkbox"/> Deuterium</p>	<p>Drift Container</p> <p>Type: N/A</p> <p>Flow Rate: N/A</p> <p>Capacity: N/A</p>	<p>Large Mech. Structures</p> <p><input type="checkbox"/> Lifting Devices</p> <p><input type="checkbox"/> Motion Controllers</p> <p><input type="checkbox"/> Scaffolding</p> <p><input type="checkbox"/> Elevated Platforms</p>
<p>Vacuum Vessels</p> <p>Inside Diameter: N/A</p> <p>Operating Pressure: N/A</p> <p>Window Material: N/A</p> <p>Window Thickness: N/A</p>	<p>Radioactive Sources</p> <p><input type="checkbox"/> Permanent Installment</p> <p><input type="checkbox"/> Temporary Use</p> <p>Type: N/A</p> <p>Strength: N/A</p>	<p>General</p> <p><input type="checkbox"/> Base Equipment</p> <p><input checked="" type="checkbox"/> Temp. Mod. To Base Equip.</p> <p><input type="checkbox"/> Perm. Mod. to Base Equip.</p> <p><input type="checkbox"/> Major New Apparatus</p> <p>Other General:</p> <p>N/A</p>
<p>Lasers</p> <p>Type: N/A</p> <p>Wattage: N/A</p> <p>Class: N/A</p> <p><input type="checkbox"/> Permanent</p> <p><input type="checkbox"/> Temporary</p> <p><input type="checkbox"/> Calibration</p> <p><input type="checkbox"/> Alignment</p>	<p>Hazardous Materials</p> <p><input type="checkbox"/> Cyanide Plating Materials</p> <p><input type="checkbox"/> Scintillation oil</p> <p><input type="checkbox"/> PCBs</p> <p><input type="checkbox"/> Methane</p> <p><input type="checkbox"/> TMAE</p> <p><input type="checkbox"/> TEA</p> <p><input type="checkbox"/> Photographic Developers</p> <p>Other Hazardous Materials:</p> <p>N/A</p>	

Computing Requirements List

Proposal Title: CLAS12 Run-Group B: electroproduction on deuterium with CLAS12

Contact Person: Silvia Niccolai

Experiment Hall: B

Data

Silo/Mass Storage (Tape): 315 TB

Amount of Simulated Data Expected (TB): 20 TB

Amount of Raw Data Expected (TB): 220

Amount of Processed Data Expected: 77

Online Storage (Disk) Required (TB): 30

Imported Data Expected from Offsite Institutions: 18

Exported Data Expected to Offsite Locations: 172

Computing

Simulation Requirements (SPEC CINT2000 hrs): 5

Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs): 5

Other Requirements:

Please add any additional information that will be useful for JLab's Information Technology group regarding unique configurations or that may require additional resources and/or coordination. Please indicate if possible what fraction of these resources will be provided by collaborating institutions and how much is expected to be provided by JLab.

N/A

Assumed Resource Requirements:

Use this section to provide any information regarding the assumed requirements for the resources needed.

N/A