

Jefferson Lab PAC 48 Proposal Cover Sheet

Proposal Type: Jeopardy Physics Category 12GeV

Proposal Title: RG-K Quark-Gluon Confinement & Strong QCD

Experiment Hall: B

Days Requested for Approval: 88

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.

E12-06-108A, E12-09-003, E12-06-119, E12-06-108, E12-12-007 (RG-A)

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: Annalisa D Angelo

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Spokesperson:

1. Volker D. Burkert

- 2. Daniel S. Carman
- 3. Annalisa D Angelo
- 4. Latifa Elouadrhiri
- 5. Fracois-Xavier Girod
- 6. Ralf W. Gothe
- 7. Victor Mokeev

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

None beyond standard Hall B

New Support Structures:

None beyond standard Hall B

Data Aquisition/ Reduction

New Support Structures:

JLab computer farm, Hall B DAQ, MSS for data storage, work disk space for cooking and analysis, standard Hall B online/offine computing, Open Science Grid for simulation

New Software:

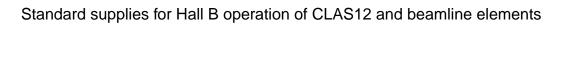
Standard Hall B DAQ for online, standard calibration, cooking, and analysis software and support for Hall B data reduction, analysis, and simulation, CLAS12 database

Major Equipment:

Magnets:

CLAS12 torus and solenoid, standard beamline magnets including the Hall B photon tagger for beam tuning and Moller polarimeter

Power Supplies:



Detectors:

CLAS12, MM, FT, CND, RICH, Tagger, beamline

Electronics:

Standard for Hall B and CLAS12, including Moller polarimeter

Computer Hardware

Standard for Hall B online, JLab computer farm, MSS, and work disk storage, Open Science Grid

Other:

None beyond standard Hall B

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: Annalisa D Angelo Phone: +390672594562

Email: annalisa.dangelo@roma2.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(μA)	Polarization and Other Requiremen ts	Est Beam- On Time(hours)	Target Materials	Target Thickness(mg/cm²)
6.6	0.100	Beam Polarization > 85%	1056	LH2	5 cm
8.8	0.100	Polarized Beam > 85%	1056	LH2	5 cm

The beam energies, EBeam, available are: EBeam = N x ELinac where N = 1, 2, 3, 4, or 5. ELinac = 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.

Cryogenics Beamline Magnets Analysis Magnets Target Magnets Type: Torus and Solenoid Flow Rate: Standard Capacity: Standard	Electrical Equipment Cryo/Electrical Devices Capacitor Banks High Voltage Exposed Equipment	Radioactive Materials List radioactive or hazardous/toxic materials planned for use: N/A	
Pressure Vessels	Flammable	Other Target Materials	
Inside Diameter: LH2 standard Operating Pressurd:H2 standard Window Material: LH2 standard Window Thickness:LH2 standard Special Target Materials Helium Deuterium	Type: LH2 standard Flow Rate: LH2 standard Capacity: LH2 standard LH2 standard Type: Standard Flow Rate: Standard Capacity: Standard Standard	Beryllium Lithium Mercury Lead Tungsten Uranium Helium Other Target Material:	
Vacuum Vessels	Radioactive Sources	Large Mech. Structures	
Inside Diameter: Standard Operating Pressure: Standard Window Material: Standard Window Thickness: Standard	Permanent Installment Temporary Use Type: N/A Strength: N/A	Lifting Devices Motion Controllers Scaffolding Elevated Platforms	
Type: Standard Wattage: Standard Class: Standard Permanent Temporary Calibration Alignment	Hazardous Materials Cyanide Plating Materials Scintillation oil PCBs Methane TMAE TEA Photographic Developers Other Hazardous Materials: N/A	General Base Equipment Temp. Mod. To Base Equip. Perm. Mod. to Base Equip. Major New Apparatus Other General: N/A	

Computing Requirements List

Proposal Title: RG-K Quark-Gluon Confinement & Strong QCD

Contact Person: Annalisa D Angelo

Experiment Hall: B

Data

Silo/Mass Storage (Tape): 4710 TB

Amount of Simulated Data Expected (TB): 400 TB

Amount of Raw Data Expected (TB): 3200

Amount of Processed Data Expected: 1120

Online Storage (Disk) Required (TB): 400

Imported Data Expected from Offsite Institutions: 400 TB

Exported Data Expected to Offsite Locations: 3350 TB

Computing

Simulation Requirements (SPEC CINT2000 hrs): 63 M core hours

Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs): 40 M Core hours

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.

JLab will provide MSS, disk space for data processing/cooking, disk space for DSTs. DSTs will be made available for offsite copying and analysis, Open Science Grid for simulation.

Assumed Resource Requirements:

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

Standard Hall B requirements