Beam Polarization and polarimetry at the EIC

Welcome

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In this time of world-wide Corona-Virus crisis, attending this workshop even virtually probably means you & your loved ones are doing well. Please keep it that way.

We wish those who are not as lucky, our best and hope for the pandemic to end soon.
Center for Frontiers in Nuclear Science

http://www.stonybrook.edu/cfns

History:
• Established in Fall 2017 with generous support from the Simons Foundation and the SUNY/NY State
• Joint initiative by Stony Brook University & Brookhaven National Lab

Vision:
• To support and help the EIC user community to enhance the case for the EIC.
• Invest in, train and support young scientists in the field to work on EIC

Scientific Activities & Operations:
Reviewed annually by an International Advisory Committee, a Physics Advisory Committee and a local Steering Committee

• 4 Workshops & 4-5 adhoc meetings
• Post doctoral program:
  • ~8-10 post docs (local)
  • ~5 joint post docs w/ remote institutions
• Bi-monthly Seminars
• Visitor programs
• Summer schools
• Supporting EIC conferences and meetings
Electron Ion Collider

“Science: Compelling & fundamental, Realization: Timely”

Electron Ion Collider

2015

Physics of EIC

2016

Evaluation

2018

2019

2019 - future

Realization

Abhay Deshpande
EIC Physics

NAS Consensus Report
EIC Science Compelling, fundamental & timely

The main thrust of EIC science on QCD: Role of Gluons

- Structure & dynamics (including spin) inside hadrons: Origin of mass & spin: Imaging
- Interaction of color in cold QCD matter (nuclei): color neutralization & hadronization
- Partons in nuclei: modification w.r.t. free nucleons & search for novel saturated gluons matter
EIC Status & Evolution

• CD0 : December 19, 2019
• Site BNL : January 9, 2020
• BNL and JLab realize EIC as partners

• A formal EIC project is now setup at BNL
• BNL+Jlab management & scientists are working together to realize it on a fast timeline.

• CD1 anticipated March 2021
• CD2 September 2022 (final design)
• CD3 4th Quarter FY2023 (start construction)

• EIC Early Finish 4th Q FY2029
• EIC CD4 4th Q FY 2030
The Electron Ion Collider Project moves forward

Electron Ion Collider (EIC) remains on a fast track moving forward through various technical, organizational and administrative.

Science program broadens and deepens
This workshop is timely & important

- Polarization of hadrons (light ions) and electron (positrons?) critically important for the project.

- *Polarimetry will influence* on the machine, IR and detector design.

- A [Yellow Report initiative](#) by the [EIC Users Group](#): The Yellow Reports expected to inform the [Technical Design Report (TDR)](#) for the detector & IR