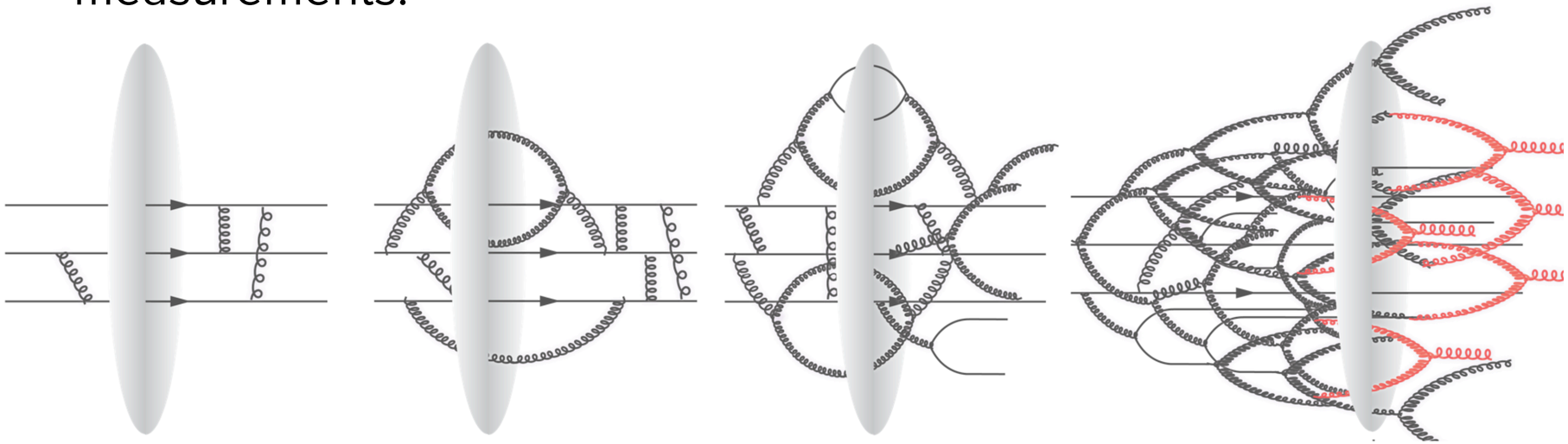
WELCOME TO THE CFNS WORKSHOP

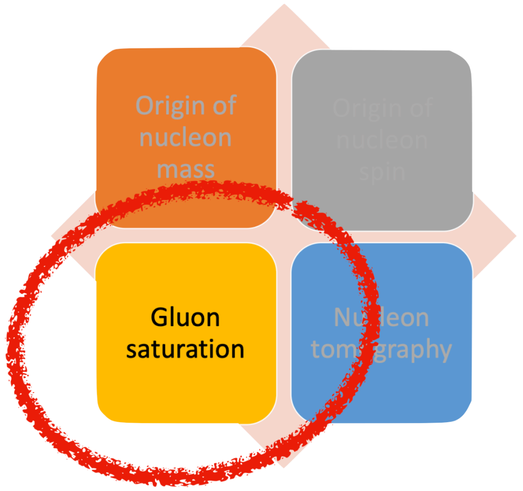
GLUON SATURATION, DIFFRACTION AND MULTIHADRON PRODUCTION AT THE EIC

Theory, Simulations and Feasibility of Measurements

WORKSHOP GOALS

- Assess and strengthen the saturation physics case at the EIC: Bring together theorists and experimentalists to critically re-evaluate the feasibility and scientific impact of saturation-sensitive measurements, guided by ePIC detector capabilities/limitations and recent CGC-based small-x QCD developments and simulation tools.
- Produce a summary report consolidating both theoretical insights and simulation-driven studies, aimed at strengthening the physics case and experimental readiness for EIC measurements.





AGENDA

- **The workshop runs from 9:00 am to 5 pm EDT on Tuesday - Thursday and 9:00 am to noon EDT on Friday**
- **The workshop dinner is on Wednesday at 6:30pm at Curry Club at SāGhar on 111 W Broadway, Port Jefferson**
- **The program is posted on Indico: https://indico.cfnssbu.physics.sunysb.edu/event/602/timetable**
- **Sessions on:**
  - Odderon, Diffraction and Exclusive Processes
  - Gluon Saturation, Small-x Evolution, and Dense QCD Matter
  - Multi-particle Production, Dijet and Dihadron Physics
  - High-energy QCD, TMDs, and Parton Distributions
  - Monte-Carlo Studies

ORGANIZING COMMITTEE

Vladimir Khachatryan
(Mississippi State University & Indiana University, USA)
Dmitri Kharzeev
(CFNS & Stony Brook University & Brookhaven National Lab, USA)
Shujie Li
(Lawrence Berkeley National Laboratory, USA)
Wenliang Bill Li
(Mississippi State University, USA)
Magno Valério Trindade Machado
(Federal University of Rio Grande do Sul, Brazil)
Michal Praszałowicz
(Jagellonian University, Poland)
Björn Schenke
(Brookhaven National Lab & CFNS & Stony Brook University, USA)
Raju Venugopalan
(Brookhaven National Lab & CFNS & Stony Brook University, USA)

Center for Frontiers in Nuclear Science

Socorro Delquaglio (SBU)
Melissa Laguerre (SBU)

CODE OF CONDUCT

All attendees at our workshop are required to adhere to the CFNS code of conduct.

Integrity

We honor our commitments and act ethically. We do not fabricate, falsify, or plagiarise in our research. We are fair and objective in reviewing our peers' work, consistent in giving proper credit and attribution in our own, and prompt in correcting the literature when errors in our own work are detected.

Responsibility

We hold ourselves and each other accountable for our actions and for our commitments. We contribute positively and value the members of the community and their perspectives. We take actions to ensure the health, safety, and welfare of ourselves and the community.

Respect

We value everyone and the contributions they make. We welcome differences of perspective, belief and opinions, and act always with common courtesy and civility. We do not bully, harrass, or discriminate against. We recognize that all members of the community play a role in its success.

Teamwork

We work cooperatively and supportively. We value our many partnerships in the community, which contribute to the advancement of science, technology, and education.

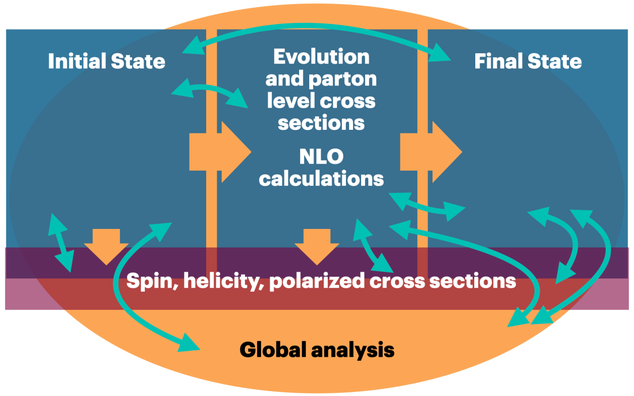
TALKS

Speakers, please upload your talks to indico

If this does not work, please email to vk355@msstate.edu

SURGE COLLABORATION

A collaborative effort to identify the best observables, perform high precision calculations, and embed them in a comprehensive numerical framework that allows for direct comparison to experimental data and ultimately global analysis, to demonstrate the presence of **gluon saturation** effects



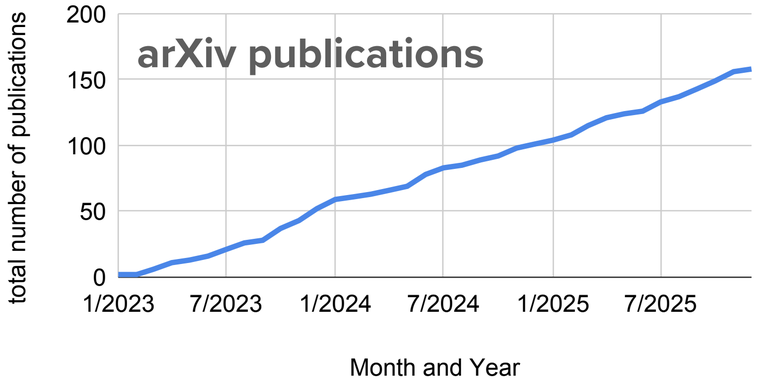
5 working groups

Members

Brookhaven National Laboratory
Y. Hatta, D. Kharzeev, Y. Mehtar-Tani, S. Mukherjee, P. Petreczky, B. Schenke †*, R. Venugopalan
Old Dominion University / JLab
I. Balitsky
McGill University
S. Caron-Huot
CUNY, Baruch College
A. Dumitru, J. Jalilian-Marian
University of California, Los Angeles
Z. Kang *
The Ohio State University
Y. Kovchegov
University of Connecticut
A. Kovner
University of Illinois at Urbana Champaign
J. Noronha-Hostler *
Southern Methodist University
F. Olness
Lebanon Valley College
D. Pitonyak
New Mexico State University
M. Sievert *
North Carolina State University
V. Skokov
Penn State University
A. Stasto †*
UC Berkeley
Xin-Nian Wang
Temple University
Farid Salazar

*=Steering Committee, †=co-spokesperson

Highly productive



Supports and organizes schools and workshops:

High energy QCD: from the LHC to the EIC
Benasque Science Center, Benasque, Spain, Aug 03-16, 2025
SURGE Collaboration Meeting and Workshop
University of California, Los Angeles (UCLA), June 23–25, 2025
The 2025 CFNS-SURGE Summer School on the Physics of the Electron-Ion Collider
Center for Frontiers in Nuclear Science, Stony Brook University, June 2-13, 2025
From Quarks and Gluons to the Internal Dynamics of Hadrons
Center for Frontiers in Nuclear Science, Stony Brook University, May 15 – 17, 2024
Workshop on Generalized Parton Distributions for Nucleon Tomography in the EIC Era
Brookhaven National Laboratory, January 17–19, 2024
SURGE Collaboration Meeting and Workshop
Brookhaven National Laboratory, June 28-30, 2023

Supported 10+ students and postdocs