2025 RHIC/AGS Annual Users' Meeting

Report of Contributions

Contribution ID: **284** Type: **not specified**

Welcome Remarks (remote)

Thursday 22 May 2025 09:00 (10 minutes)

Presenter: HEWETT, JoAnne (Director of Brookhaven National Laboratory)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **286** Type: **not specified**

Opening Remarks

Thursday 22 May 2025 09:10 (25 minutes)

Presenter: Prof. DESHPANDE, Abhay (Stony Brook University & BNL)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **287** Type: **not specified**

C-AD Report

Thursday 22 May 2025 10:05 (20 minutes)

Presenter: SHREY, Travis (BNL)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **288** Type: **not specified**

STAR Run 25 Report

Thursday 22 May 2025 10:50 (30 minutes)

Presenter: Dr HU, Yu (Lawrence Berkeley National Laboratory)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **289** Type: **not specified**

sPHENIX Run 25 Report

Thursday 22 May 2025 11:20 (30 minutes)

Presenter: REED, Rosi (Lehigh University)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **290** Type: **not specified**

Workshop Report: Jets

Thursday 22 May 2025 13:00 (20 minutes)

Presenters: PEREPELITSA, Dennis (University of Colorado Boulder); SALUR, Sevil (Rutgers University)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **292** Type: **not specified**

Report from the NSF

Presenter: GREENE, Dr. Senta Victoria (Program Director, U.S. National Science Foundation)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **293** Type: **not specified**

Report from the DOE (remote)

Thursday 22 May 2025 09:35 (30 minutes)

Presenter: STEPHENSON, Dr. Sharon (Physics Research Division Director, Office of Nuclear Physics, Department of Energy)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **294** Type: **not specified**

sPHENIX Highlights

Thursday 22 May 2025 14:30 (30 minutes)

Presenters: PARK, JaeBeom; PARK, Jaebeom

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **295** Type: **not specified**

Workshop Report: Heavy Flavor

Thursday 22 May 2025 13:20 (20 minutes)

Presenters: OTTINO, Gregory (Lawrence Berkeley National Laboratory); MA, Rongrong (Brookhaven National Laboratory)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **296** Type: **not specified**

PHENIX Highlights

Thursday 22 May 2025 15:00 (30 minutes)

Presenter: SAKAGUCHI, Takao (BNL)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **297** Type: **not specified**

STAR Highlights

Thursday 22 May 2025 15:30 (30 minutes)

Presenter: JIN, Chenliang (Rice University)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **298** Type: **not specified**

Presentation of Merit & Thesis Awards

Thursday 22 May 2025 16:00 (5 minutes)

Presenter: Prof. DESHPANDE, Abhay (Stony Brook University & BNL)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **299** Type: **not specified**

EIC Project Status

Friday 23 May 2025 10:00 (30 minutes)

Presenter: YECK, Jim

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **300** Type: **not specified**

ePIC: Status & Plans

Friday 23 May 2025 11:00 (30 minutes)

Presenter: Prof. BRANDENBURG, Daniel (Ohio State University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **301** Type: **not specified**

EIC Detector II: Status & Plans (virtual)

Presenter: VOSSEN, Anselm (Duke University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **302** Type: **not specified**

Report from BNL Facilities

Presenter: DANIELS, Thomas (Brookhaven National Laboratory)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **303** Type: **not specified**

Poster Awards

Friday 23 May 2025 11:35 (5 minutes)

Presenter: Prof. KNOSPE, Anders (Lehigh University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **304** Type: **not specified**

Business Meeting

Friday 23 May 2025 11:55 (20 minutes)

Presenter: Prof. KNOSPE, Anders (Lehigh University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **370** Type: **not specified**

Particle Suppression in AA and p/dA Collisions Including Short Path Length Corrections

Presenter: HOROWITZ, William (University of Cape Town)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **371** Type: **not specified**

Workshop Report: Computing, Machine Learning, & AI

Presenter: MENGEL, Tanner (University of Colorado, Boulder)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **372** Type: **not specified**

Workshop Report: BES

Friday 23 May 2025 09:00 (20 minutes)

Presenters: Dr ALMAALOL, Dekra (University of Illinois at Urbana-Champaign); DUCKWORTH, Emilie (Kent State University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **373** Type: **not specified**

Workshop Report: AI/ML

Friday 23 May 2025 09:20 (20 minutes)

Presenter: GO, Yeonju (Brookhaven National Laboratory)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **374** Type: **not specified**

Workshop Report: ePIC/EIC

Friday 23 May 2025 09:40 (20 minutes)

Presenters: WONG, Cheuk-Ping (Brookhaven National Laboratory); ANDERSON, Derek (Iowa State University)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **383** Type: **not specified**

Poster Winner

Friday 23 May 2025 11:40 (15 minutes)

Presenter: PONCE, Iris

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **384** Type: **not specified**

Group Picture

Thursday 22 May 2025 11:50 (10 minutes)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **386** Type: **not specified**

Thesis Award Winner

Thursday 22 May 2025 16:10 (5 minutes)

Presenter: XU, Zhiwan (Argonne National Laboratory)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **387** Type: **not specified**

Thesis Award Winner

Thursday 22 May 2025 16:05 (5 minutes)

Presenter: LIN, Weijian (Lucy)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **389** Type: **not specified**

No Host Lunch Break

Tuesday 20 May 2025 12:30 (1 hour)

Contribution ID: **391** Type: **not specified**

AUM dinner @ Painters - Reservation Required

Wednesday 21 May 2025 18:00 (2 hours)

Contribution ID: **392** Type: **not specified**

The birth of RHIC and its first discoveries

Thursday 22 May 2025 16:45 (30 minutes)

Presenter: Prof. ZAJC, William (Columbia University)

Session Classification: RHIC 25 Symposium

Contribution ID: **393** Type: **not specified**

From RHIC to the LHC and back again

Thursday 22 May 2025 17:15 (30 minutes)

Presenter: PEREPELITSA, Dennis (University of Colorado Boulder)

Session Classification: RHIC 25 Symposium

Contribution ID: **394** Type: **not specified**

RHIC physics at high baryon density

Thursday 22 May 2025 17:45 (30 minutes)

Presenter: RUAN, Lijuan (Brookhaven National Laboratory)

Session Classification: RHIC 25 Symposium

Contribution ID: **395** Type: **not specified**

The lasting impact of RHIC science

Thursday 22 May 2025 18:15 (30 minutes)

Presenter: Prof. NORONHA-HOSTLER, Jacquelyn (University of Illinois Urbana Champaign)

Session Classification: RHIC 25 Symposium

Contribution ID: **397** Type: **not specified**

Sambamurti Lecture

Contribution ID: **398** Type: **not specified**

Workshop report: Flow

Thursday 22 May 2025 13:40 (20 minutes)

Presenters: UMAKA, Ejiro (Brookhaven National Laboratory); YAN, Zhengxi (student@stonybrook.edu;staff@stonybrook

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **399** Type: **not specified**

High-pT physics in sPHENIX

Wednesday 21 May 2025 09:00 (25 minutes)

Presenter: LIS, Daniel

Session Classification: Workshop 4: Jets

Contribution ID: **400** Type: **not specified**

Jet theory highlights

Wednesday 21 May 2025 09:25 (25 minutes)

Presenter: Dr ANDRES, Carlota (LIP, Lisbon)

Session Classification: Workshop 4: Jets

Contribution ID: **401** Type: **not specified**

Jets in STAR

Wednesday 21 May 2025 09:50 (25 minutes)

Presenter: TAMIS, Andrew (Yale University)

Session Classification: Workshop 4: Jets

Contribution ID: **402** Type: **not specified**

Jets at the LHC

Wednesday 21 May 2025 10:45 (30 minutes)

Presenters: LONGO, Riccardo (University of Illinois at Urbana-Champaign); LONGO, Riccardo (University of Illinois at Urbana-Champaign)

Session Classification: Workshop 4: Jets

Contribution ID: **403** Type: **not specified**

EECs in Jets

Wednesday 21 May 2025 11:15 (25 minutes)

Presenter: LIANG-GILMAN, Beatrice (member@berkeley.edu;student@berkeley.edu;faculty@berkeley.edu;employee@be

Session Classification: Workshop 4: Jets

Contribution ID: **404** Type: **not specified**

Jets in ePIC

Wednesday 21 May 2025 12:00 (25 minutes)

Presenter: ANDERSON, Derek (Iowa State University)

Session Classification: Workshop 4: Jets

Contribution ID: **405** Type: **not specified**

Small systems - hydrodynamics

Wednesday 21 May 2025 13:30 (25 minutes)

Presenter: Dr SCHENKE, Bjoern (BNL)

Session Classification: Workshop 5: Flow

Contribution ID: **406** Type: **not specified**

Small systems - STAR

Wednesday 21 May 2025 13:55 (25 minutes)

Presenter: PAUL, Souvik (staff@stonybrook.edu;student@stonybrook.edu)

Session Classification: Workshop 5: Flow

Contribution ID: **407** Type: **not specified**

Small systems - LHC

Wednesday 21 May 2025 14:20 (25 minutes)

Presenter: SEIDLITZ, Blair (Columbia University)

Session Classification: Workshop 5: Flow

Contribution ID: **408** Type: **not specified**

QCD collectivity inside high-multiplicity jets in p+p

Wednesday 21 May 2025 14:45 (25 minutes)

Presenter: BATY, Austin (University of Illinois Chicago)

Session Classification: Workshop 5: Flow

Contribution ID: **409** Type: **not specified**

Anisotropic flow measurements - highlights from STAR BES program

Wednesday 21 May 2025 15:30 (25 minutes)

Presenter: SHARMA, Sharang (IISER Tirupati)

Session Classification: Workshop 5: Flow

Contribution ID: **410** Type: **not specified**

Anisotropic flow measurements - PHENIX highlights and sPHENIX prospects

Wednesday 21 May 2025 16:20 (30 minutes)

Presenter: BELMONT, Ron (University of North Carolina Greensboro)

Session Classification: Workshop 5: Flow

Contribution ID: **411** Type: **not specified**

Heavy-flavor anisotropic flow - CMS

Wednesday 21 May 2025 15:55 (25 minutes)

Presenter: SAHA, Nihar

Session Classification: Workshop 5: Flow

Contribution ID: **412** Type: **not specified**

Overview of AI/ML applications at RHIC

Wednesday 21 May 2025 09:00 (30 minutes)

Artificial intelligence (AI) has a large transformative potential and is currently changing the industries around the globe. The deployment of cutting-edge AI techniques offers unparalleled opportunities to revolutionize data collection, reconstruction, and data analysis of the new era nuclear physics experiments. This talk will focus on the latest AI advancements and applications at the Relativistic Heavy Ion Collider (RHIC) spanning from the applications at the accelerator complex and detector design, towards data reduction, data reconstruction, physics analysis, and simulations.

Author: KVAPIL, Jakub (Los Alamos National Laboratory)

Presenter: KVAPIL, Jakub (Los Alamos National Laboratory)

Session Classification: Workshop 6: AI/ML

Contribution ID: **413** Type: **not specified**

The Ecology of Uncertainty: Capturing Epistemic Doubt in Hadron Structure Analyses

Wednesday 21 May 2025 09:30 (25 minutes)

Inverse problems are ubiquitous in hadron structure and tomography, where accurately characterizing uncertainties is crucial for unraveling new physics hiding within these uncertainties. In this new precision era of QCD, it is vital to create a translation between our physics and next generation AI/ML algorithms, using tools such as evidential deep learning and information-theoretic metrics to capture and separate contributions from aleatoric, epistemic, and distributional uncertainties. My research focuses on deploying evidence-based machine learning methods to decode parton distribution functions (PDFs) while exploring the vast parameter space of phenomenological and beyond-the-Standard-Model scenarios. Incorporating physics observables such as lattice QCD constraints and experimental measurements within these AI/ML paradigms refines the fidelity of PDF extractions and deepens our understanding of nonperturbative QCD. Ultimately, this integrated approach pushes the frontier of hadron structure discovery, aligning cutting-edge AI/ML progress with emerging opportunities at existing and future experimental physics facilities such as the EIC.

Author: KRIESTEN, Brandon (University of Virginia)

Presenter: KRIESTEN, Brandon (University of Virginia)

Session Classification: Workshop 6: AI/ML

Contribution ID: **414** Type: **not specified**

Preparing the Jet-AI/ML landscape for the EIC

Wednesday 21 May 2025 09:55 (25 minutes)

Author: Prof. KUNNAWALKAM ELAYAVALLI, Rithya (Vanderbilt University)

Presenter: Prof. KUNNAWALKAM ELAYAVALLI, Rithya (Vanderbilt University)

Session Classification: Workshop 6: AI/ML

Contribution ID: **415** Type: **not specified**

Machine learning on FPGAs for event selection

Wednesday 21 May 2025 10:45 (25 minutes)

Author: BOSSI, Hannah

Presenter: BOSSI, Hannah

Session Classification: Workshop 6: AI/ML

Contribution ID: **416** Type: **not specified**

Real-time Information Distillation on Novel AI Hardware

Wednesday 21 May 2025 11:10 (25 minutes)

Author: HUANG, Yi (Brookhaven national lab)

Presenter: HUANG, Yi (Brookhaven national lab)

Session Classification: Workshop 6: AI/ML

Contribution ID: **417** Type: **not specified**

Generative AI for Jet Analysis and Detector Simulation

Wednesday 21 May 2025 11:35 (25 minutes)

We present denoising diffusion probabilistic models (DDPMs) as high-fidelity, AI-based generative surrogates for producing full-detector, whole-event simulations in heavy-ion experiments [1]. Trained on HIJING minimum-bias data propagated through the sPHENIX detector geometry with Geant4, DDPMs achieve roughly a hundredfold speedup over standard Geant4 simulations and exhibit superior fidelity compared to GANs. This capability enables the rapid generation of large-scale datasets, essential for high-statistics analyses and for embedding rare high-pT signals, such as jets, into complex backgrounds.
In addition, we introduce a generative AI model for jet background subtraction in heavy-ion collisions. While earlier approaches mainly relied on supervised regression techniques, this work represents the first self-supervised application. We trained UVCGAN [2], a Cycle-Consistent Generative Adversarial Network (CycleGAN), using simulated sPHENIX data to transform calorimeter data from heavy-ion collisions into their proton-proton counterparts, and vice versa, without requiring paired samples. This model effectively separates jets from the underlying event background while preserving global jet kinematics and internal jet structure.

[1] Y. Go and D. Torbunov et al, Effectiveness of denoising diffusion probabilistic models for fast and high-fidelity whole-event simulation in high-energy heavy-ion experiments, https://link.aps.org/doi/10.1103/PhysRevC https://arxiv.org/abs/2406.01602
[2] D. Torbunov et al, UVCGAN v2: An Improved Cycle-Consistent GAN for Unpaired Image-to-Image Translation, https://arxiv.org/abs/2303.16280

Author: LI, Shuhang (Columbia University)

Presenter: LI, Shuhang (Columbia University)

Session Classification: Workshop 6: AI/ML

Contribution ID: **418** Type: **not specified**

Foundation Model for Tracking

Wednesday 21 May 2025 12:00 (25 minutes)

The advent of large language models (LLMs) and foundation models has transformed the landscape of artificial intelligence. Unlike traditional AI methods that depend heavily on hand-crafted rules and heuristics, these models harness massive datasets and self-supervised learning to develop general-purpose representations. This paradigm enables them to adapt effectively to a wide range of downstream tasks with minimal labeled data. In this talk, we present our ongoing work on developing a foundation model for nuclear and particle physics (FM4NPP). Our approach focuses on training with sparse particle detector data using self-supervised techniques—without the need for manual annotations or labels. The model is designed to exhibit neural scaling behavior, where increased model size and data volume translate into improved performance. We plan to demonstrate the model's versatility by applying it to different downstream tasks such as particle tracking. Early results suggest that FM4NPP has the potential to outperform existing methods. This work is still in progress, and we welcome questions and feedback from the audience.

Author: REN, Yihui

Presenter: REN, Yihui

Session Classification: Workshop 6: AI/ML

Contribution ID: **419** Type: **not specified**

STAR Heavy Flavor Physics Overview

Tuesday 20 May 2025 09:00 (30 minutes)

Presenter: SHEN, Kaifeng

Session Classification: Workshop 2: HF

Contribution ID: **420** Type: **not specified**

sPHENIX Heavy Flavor Overview

Tuesday 20 May 2025 09:30 (30 minutes)

Presenter: PATTON, Alexander (MIT)

Session Classification: Workshop 2: HF

Contribution ID: **421** Type: **not specified**

PHENIX Heavy Flavor Overview

Tuesday 20 May 2025 10:00 (30 minutes)

Presenter: Dr LIU, Ming (Los Alamos)

Session Classification: Workshop 2: HF

Contribution ID: **422** Type: **not specified**

LHC Open Heavy Flavor

Tuesday 20 May 2025 11:00 (30 minutes)

Presenter: THOMAS, Deepa (The University of Texas at Austin)

Session Classification: Workshop 2: HF

Contribution ID: **423** Type: **not specified**

LHC Quarkonia

Tuesday 20 May 2025 11:30 (30 minutes)

Presenter: ASCIOTI, Maria Elena

Session Classification: Workshop 2: HF

Contribution ID: **424** Type: **not specified**

Theory of Quarkonia

Tuesday 20 May 2025 14:00 (30 minutes)

Presenter: YAO, Xiaojun (Massachusetts Institute of Technology)

Session Classification: Workshop 2: HF

Contribution ID: **425** Type: **not specified**

Theory of Open Heavy Flavor

Tuesday 20 May 2025 14:30 (30 minutes)

Presenter: FU, Yu

Session Classification: Workshop 2: HF

Contribution ID: **426** Type: **not specified**

ePIC overview

Tuesday 20 May 2025 15:00 (30 minutes)

Presenter: DONGWI, Dongwi (Stony Brook University)

Session Classification: Workshop 2: HF

Contribution ID: **427** Type: **not specified**

EIC Commissioning

Tuesday 20 May 2025 09:15 (25 minutes)

Presenter: Dr NATOCHII, Andrii (Brookhaven National Laboratory)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **428** Type: **not specified**

RHIC R&R

Tuesday 20 May 2025 09:40 (30 minutes)

Author: ALBANESE, Marianna

Presenters: CHAN, David (BNL); ALBANESE, Marianna

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **429** Type: **not specified**

EIC Machine Status and Plans

Tuesday 20 May 2025 10:10 (20 minutes)

Presenter: MONTAG, Christoph (BNL)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **430** Type: **not specified**

EIC Physics in PHENIX

Tuesday 20 May 2025 11:00 (25 minutes)

Presenter: LOOMIS, Devon (University of Michigan, Ann Arbor)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **431** Type: **not specified**

An Overview of the STAR Spin Physics Program: From RHIC to EIC

Tuesday 20 May 2025 11:25 (25 minutes)

Presenter: NAM, Jae (Temple University)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **433** Type: **not specified**

Report on EIC Early Physics Workshop (Phenomenology)

Tuesday 20 May 2025 13:30 (25 minutes)

Presenter: BHATTACHARYA, Shohini (University of Connecticut)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **435** Type: **not specified**

The ePIC Far Forward Detectors

Tuesday 20 May 2025 14:20 (20 minutes)

Presenter: JENTSCH, Alexander (Brookhaven National Laboratory)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **436** Type: **not specified**

ePIC PID Status Update

Tuesday 20 May 2025 14:40 (20 minutes)

Presenter: GARG, Prakhar (Yale University)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **437** Type: **not specified**

ePIC Tracking Status and Plan

Tuesday 20 May 2025 15:50 (20 minutes)

Presenter: LI, Shujie (Lawrence Berkeley National Laboratory)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **438** Type: **not specified**

Calorimetry at ePIC

Tuesday 20 May 2025 16:10 (20 minutes)

Presenter: PROTZMAN, Tristan (Lehigh University)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **439** Type: **not specified**

ePIC Computing Status Update

Tuesday 20 May 2025 16:30 (20 minutes)

Presenter: KALINKIN, Dmitrii (University of Kentucky)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **440** Type: **not specified**

ePIC DAQ Status Update

Tuesday 20 May 2025 15:30 (20 minutes)

Presenter: LANDGRAF, Jeff (Brookhaven National Laboratory)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **441** Type: **not specified**

Report on EIC Early Physics Workshop (ePIC)

Tuesday 20 May 2025 16:50 (25 minutes)

Presenter: MA, Rongrong (Brookhaven National Laboratory)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **442** Type: **not specified**

Experimental overview of the BES II

Tuesday 20 May 2025 09:00 (30 minutes)

Presenter: RUAN, Lijuan (Brookhaven National Laboratory)

Session Classification: Workshop 1: BES

Contribution ID: **443** Type: **not specified**

Theoretical overview of the BES

Tuesday 20 May 2025 11:00 (30 minutes)

Presenter: DU, Lipei (McGill University)

Session Classification: Workshop 1: BES

Contribution ID: **444** Type: **not specified**

QCD equation of state at finite density and the critical point

Tuesday 20 May 2025 11:30 (30 minutes)

Presenter: JAHAN, Johannes

Session Classification: Workshop 1: BES

Contribution ID: **445** Type: **not specified**

Cumulants and fluctuations measurement at the BES II

Tuesday 20 May 2025 12:00 (30 minutes)

Presenter: VOVCHENKO, volodymer

Session Classification: Workshop 1: BES

Contribution ID: **446** Type: **not specified**

Analysis of BES Fluctuations and cumulants (experimental)

Tuesday 20 May 2025 09:30 (30 minutes)

Presenter: SWEGER, Zachary (University of California, Davis)

Session Classification: Workshop 1: BES

Contribution ID: **447** Type: **not specified**

UPC

Tuesday 20 May 2025 10:00 (30 minutes)

Presenter: IKBAL, Ashik

Session Classification: Workshop 1: BES

Contribution ID: **448** Type: **not specified**

Flow Overview (experimental)

Tuesday 20 May 2025 13:50 (30 minutes)

Presenter: NASSIM, MD

Session Classification: Workshop 1: BES

Contribution ID: **449** Type: **not specified**

Flow and Isobars Overview (theory)

Tuesday 20 May 2025 14:20 (30 minutes)

Presenter: MAGDY, Niseem

Session Classification: Workshop 1: BES

Contribution ID: **450** Type: **not specified**

The role of Neutron Stars in constraining the QCD Equation of State

Tuesday 20 May 2025 15:50 (30 minutes)

Presenter: DEXHEIMER, Veronica (Kent State University)

Session Classification: Workshop 1: BES

Contribution ID: **451** Type: **not specified**

Probing Dense Nuclear Matter: Connecting Neutron Stars and Heavy-Ion Collisions

Tuesday 20 May 2025 16:20 (30 minutes)

The study of neutron stars and heavy-ion collisions offers complementary access to the properties of strongly interacting matter at extreme densities. In particular, the simultaneous observation of both massive neutron stars and light stars with small radii suggests a sharp rise in the speed of sound in dense nuclear matter, potentially approaching the causal limit at baryon densities of a few times nuclear saturation. A key question is whether such behavior, inferred from neutron-star phenomenology, is compatible with constraints from terrestrial experiments. In this talk, I present a framework that connects these two regimes by mapping a family of neutron-star equations of state (EOS), characterized by a rapid increase in the speed of sound, into the symmetry energy expansion appropriate for the nearly symmetric matter probed in low-energy heavy-ion collisions. Using the hadronic transport code SMASH with density-dependent mean-field potentials, we simulate collective flow observables and compare them with experimental data. Our results indicate that EOS featuring a peak in the speed of sound squared at 2-3 n_sat, supporting maximum neutron-star masses up to M_max ~ 2.5 M_sun, remain consistent with HIC constraints. I will briefly discuss complementary approaches to constraining dense matter using chiral effective field theory and perturbative QCD, highlighting their roles in bridging the physics of neutron stars and laboratory experiments.

Presenter: YAO, Nanxi

Session Classification: Workshop 1: BES

Contribution ID: **452** Type: **not specified**

eToF calibration

Tuesday 20 May 2025 14:50 (30 minutes)

Presenter: LABONTE, Mathias

Session Classification: Workshop 1: BES

Contribution ID: **453** Type: **not specified**

The Cold QCD Program at sPHENIX

Tuesday 20 May 2025 13:55 (25 minutes)

Presenter: MAHAUT, Virgile (CEA)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **454** Type: **not specified**

Energy correlators from RHIC to EIC

Tuesday 20 May 2025 11:50 (25 minutes)

Presenter: PENTTALA, Jani (UCLA)

Session Classification: Workshop 3: ePIC/EIC

Contribution ID: **455** Type: **not specified**

Data and Analysis Preservation at RHIC

Wednesday 21 May 2025 11:40 (20 minutes)

Presenter: LANCON, Eric (BNL)

Session Classification: Workshop 4: Jets

Contribution ID: **456** Type: **not specified**

EIC Science with High School students!

Wednesday 21 May 2025 13:30 (45 minutes)

Presenter: Prof. KUNNAWALKAM ELAYAVALLI, Rithya (Vanderbilt University)

Session Classification: Workshop 7: Mentoring

Contribution ID: **457** Type: **not specified**

Group free discussion on the current state of mentoring

Wednesday 21 May 2025 14:15 (45 minutes)

Presenters: Prof. KUNNAWALKAM ELAYAVALLI, Rithya (Vanderbilt University); REED, Rosi (Lehigh University)

Session Classification: Workshop 7: Mentoring

Contribution ID: **458** Type: **not specified**

Special announcement: Annual Reviews Video Contest for Early-Career Physicists

Thursday 22 May 2025 16:15 (5 minutes)

Presenter: PESKIN, Michael (SLAC)

Session Classification: Plenary Session I - Bldg. 488 Berkner Hall Auditorium

Contribution ID: **459** Type: **not specified**

Sambamurti Award

Presenters: Prof. KNOSPE, Anders (Lehigh University); HAGGERTY, John (Brookhaven National Laboratory)

Contribution ID: **460** Type: **not specified**

Sambamurti Award

Friday 23 May 2025 11:30 (5 minutes)

Presenters: Prof. KNOSPE, Anders (Lehigh University); HAGGERTY, John (Brookhaven National Laboratory)

Session Classification: Plenary Session II - Bldg. 488 Berkner Hall Auditorium