

sPHENIX Run2024 Report

sPHENIX Run2024 Report

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Run Coordinator 2024



The Goal and the Plan and Reality

Year	Species	$\sqrt{s_{NN}}$ [GeV]	Cryo Weeks	Physics Weeks	Rec. Lum. $ z < 10$ cm	Samp. Lum. $ z < 10$ cm
2023	Au+Au	200	24 (28)	9 (13)	3.7 (5.7) nb ⁻¹	4.5 (6.9) nb ⁻¹
2024	$p^\uparrow p^\uparrow$	200	24 (28)	12 (16)	0.3 (0.4) pb ⁻¹ [5 kHz] 4.5 (6.2) pb ⁻¹ [10%-str]	45 (62) pb ⁻¹
2024	p-Au	200	–	5	0.003 pb ⁻¹ [5 kHz] 0.01 pb ⁻¹ [10%-str]	0.11 pb ⁻¹
2025	Au+Au	200	24 (28)	20.5 (24.5)	13 (15) nb ⁻¹	21 (25) nb ⁻¹

The Real 2023:

10.5 weeks of sPHENIX
commissioning
and then...



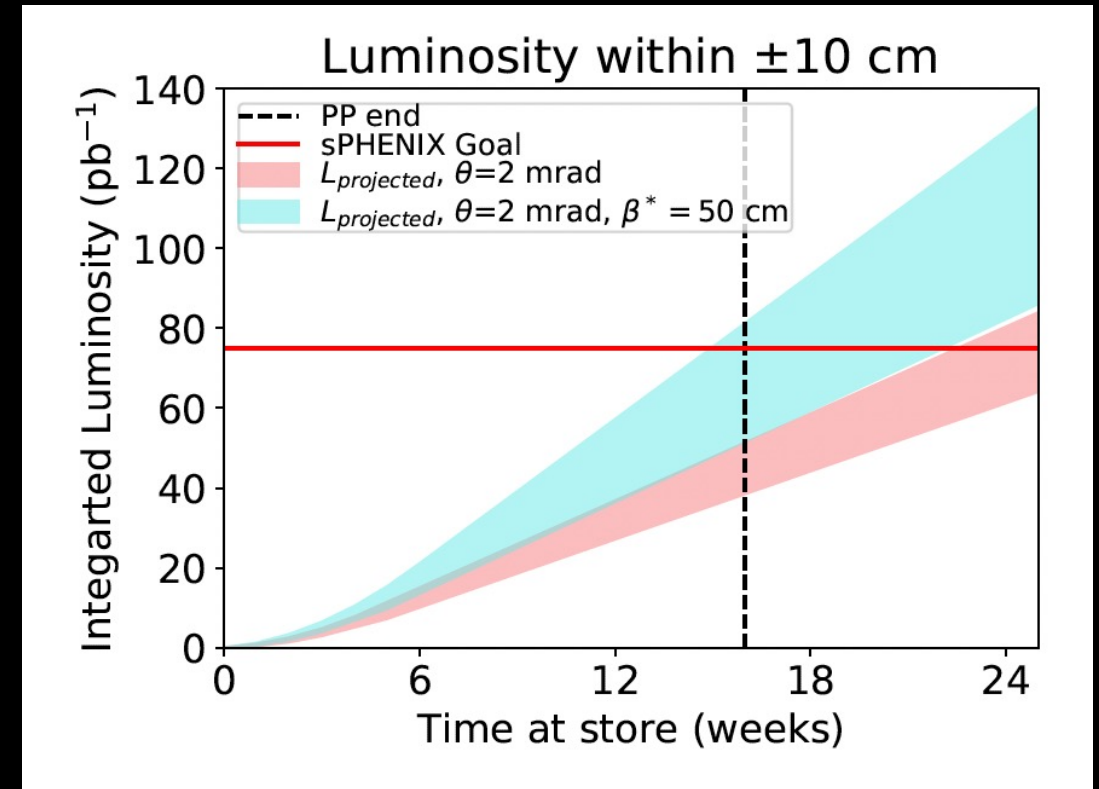
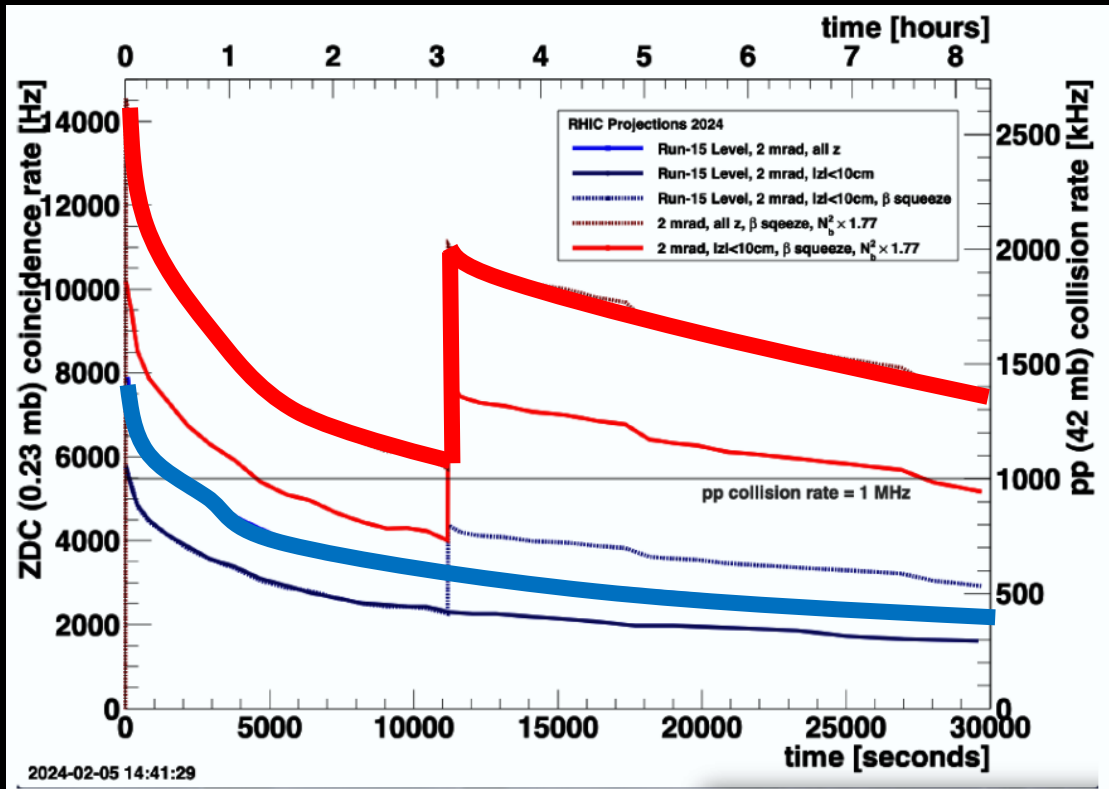
PAC strongly endorsed 28 weeks in 2024.

The Real 2024:

19 cryo weeks [2 setup, 6 commission, 11 physics] + 6 carry over
How to still achieve the pp minimum of 45 pb⁻¹ in that time frame?

*Note that corresponds to 75 pb⁻¹ delivered within $|z| < 10$ cm.

C-AD working hard to meet the challenge...



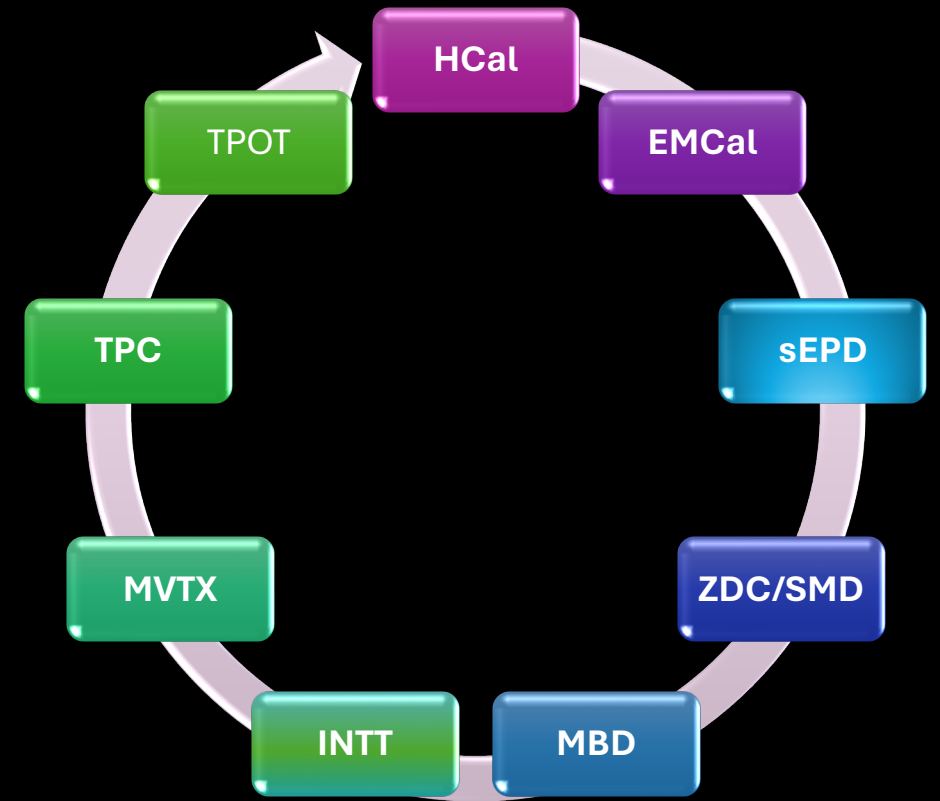
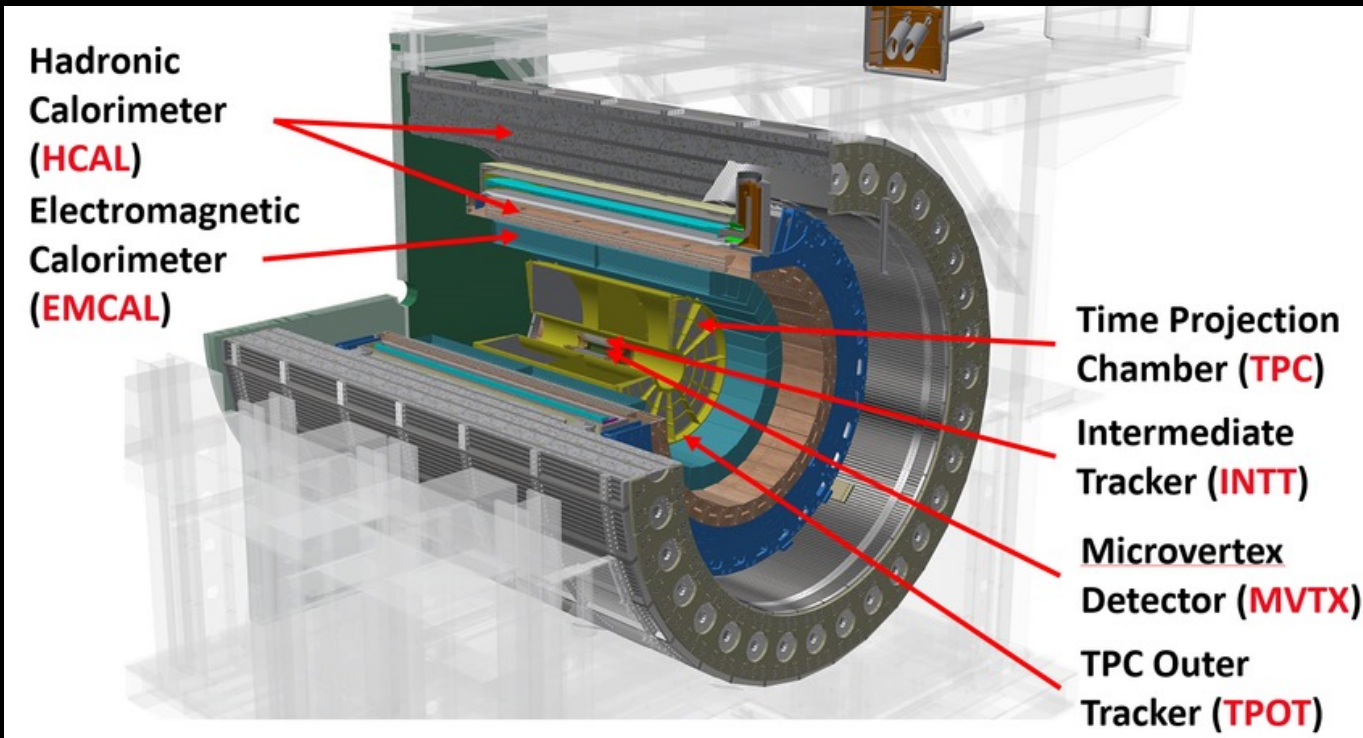
Run-15 pp 200 GeV levels

Beyond Run-15 with higher bunch intensities and beta squeeze
3 hours into store

Squeezing the β^* from 85 to 50 cm 3 hours into the store, in combination with exceeding 2.25×10^{11} protons/bunch, sPHENIX will reach their luminosity goals in the expected time at store. Intensity beyond 2.25×10^{11} assumes three additional weeks after the nominal 4-week ramp up time.

Parameter	Run15	Run24-A	Run24-B	Run24-C	Run24-D	Run24-E
β^* (cm)	85	85	85	50	60	50
θ	0	2	2	2	2	2
$N_{1,2}$ (10^{11})	2.25	2.25	2.5	2.25	2.5	2.5
$L_{\text{max}}/\text{week}$ pb^{-1}	25	3.8	4.7	5.1	5.7	7.1
Weeks to 75 pb^{-1}	-	22	19	17	16	15

sPHENIX Detector Guide



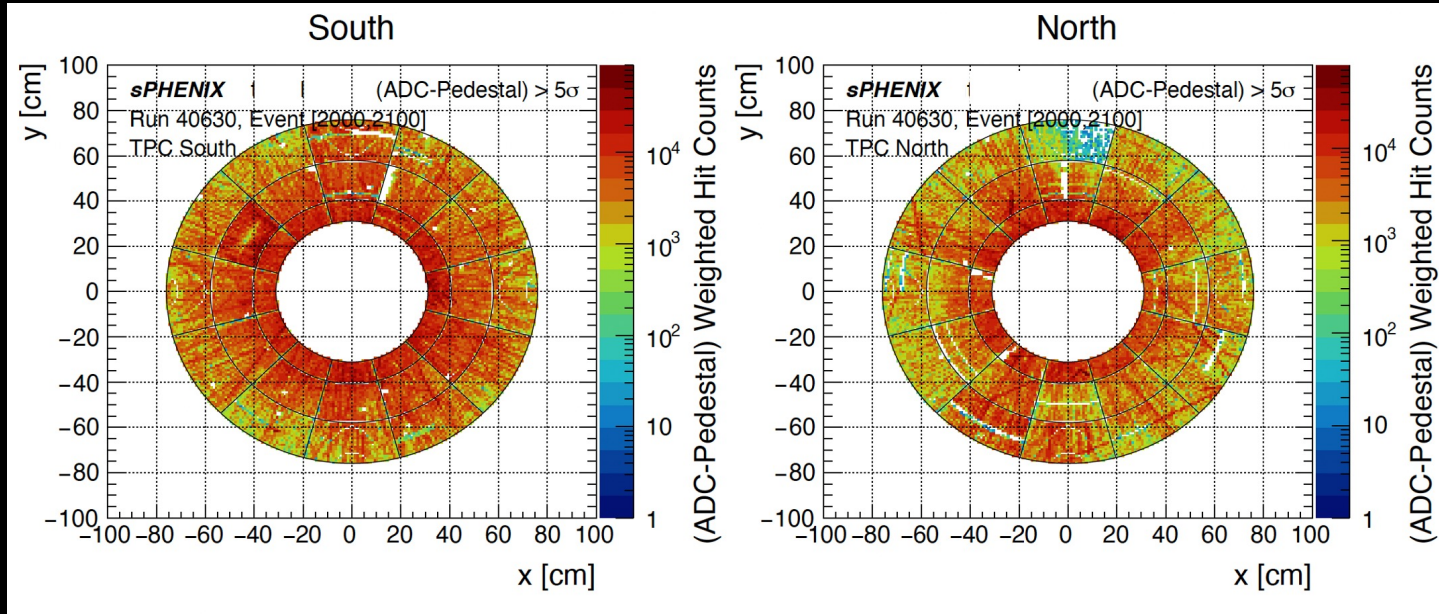
Calorimeters - full EM/Hadronic, γ , jets, triggers

Forward – Min. Bias Det., ZDC/SMD, Event Plane Det.

Tracking/Micro-vertexing – MVTX, INTT, TPC, TPOT

Packed Shut Down Schedule

- August 2023 - April 2024
- sEPD, MBD, INTT, MVTX removed
- Months long TPC mitigation success



- Everything re-installed, tested
- Closed pole-tip doors April 12, 2024



Putting sPHENIX in a position for success



Jimmy Labounty
Frank Toldo
Jim Mills
Jeff Hoogsteden
Aaron Allen
Joel Vasquez
Dan Cacace
Mike Rau
Mike Lenz
Sean Stoll

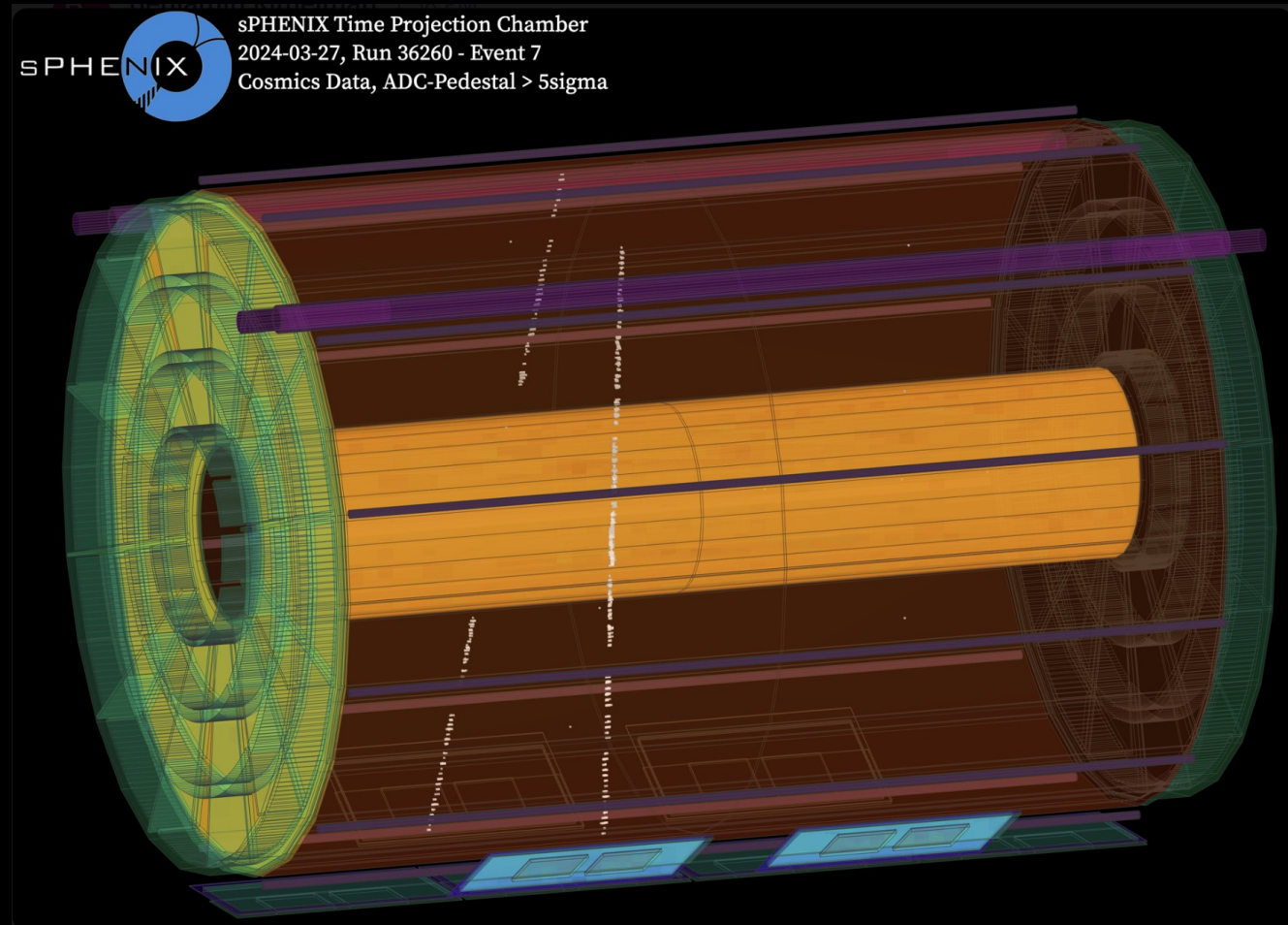
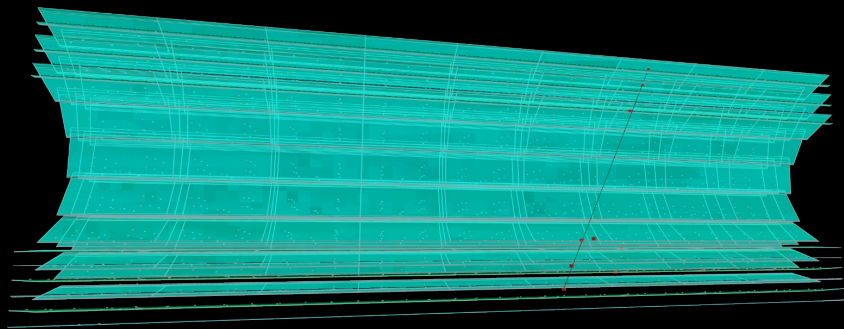
(Not in the picture)
Sal Polizzo
Bill Lenz
Damon Miraglia
Kevin Mandracchia
Marianna Albanese
Rob Pisani
Bob Azmoun

Extra thanks to C-AD for
engaging resources at
every step

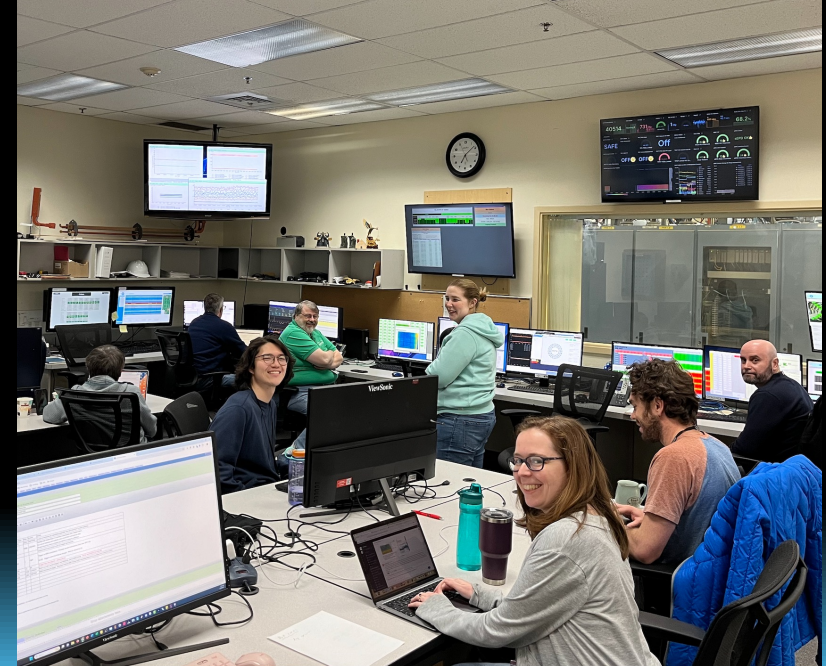
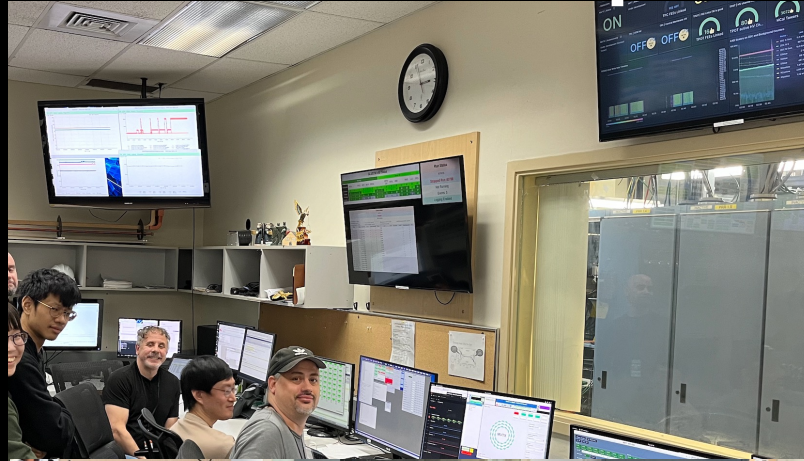
Cosmic Rays in 1008

sPHENIX benefited from delay to start of cryo to April 15.

Major payoff was being able to check out detectors with cosmic running and daily access.



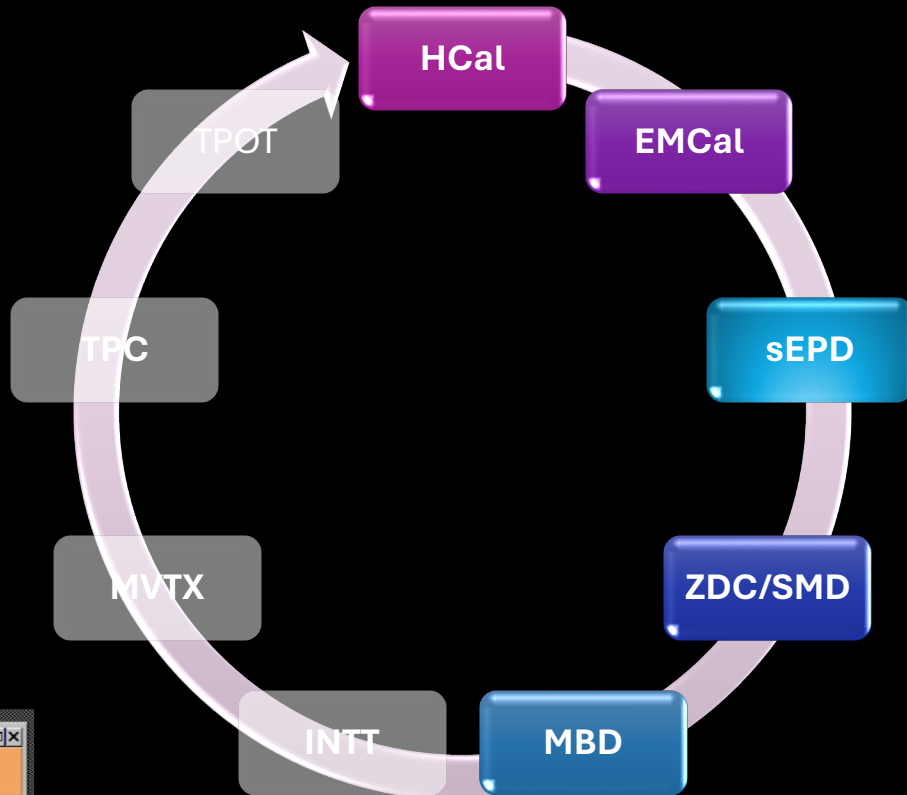
First pp collisions – April 26, 2024



sPHENIX in two parts (I)

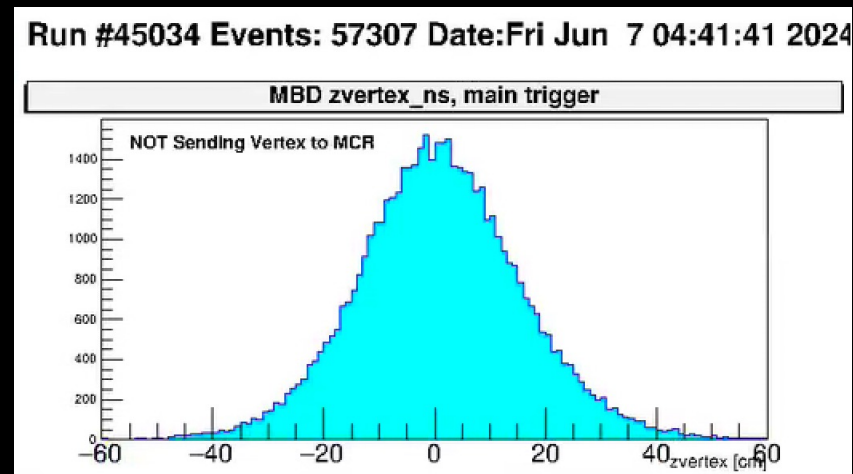
DAQ for ADC systems is fully pipelined
readout spec'ed at 15 kHz

Level-1 trigger rate and > 90% livetime



Counter Status						
06:21:03						
Running for 0:02:05						
Run: 45041						
Multi Event Buffering: 4, DEAD4N: 15, gl1 count: 858656						
busymask: 0x0 endat: 500		MVTX busymask: 0x0 endat: 500		EMCAL busymask: 0xFFFF endat: 500		SEPD/ZDC busymask: 0x40000 endat: 500
HCAL busymask: 0x30000 endat: 500		MBD busymask: 0x80000 endat: 500		LL1 busymask: 0x0		
Host	Status	Busy Rate	Count	Data Volume (M)	Run	Host
gl1daq			1077407	2104	45041	intt0
seb00 - EmCal (ZS)	not busy	0.00%	1077431	11835	45041	intt1
seb01 - EmCal (ZS)	not busy	0.00%	1077441	11775	45041	intt2
seb02 - EmCal (ZS)	not busy	0.00%	1077454	11946	45041	intt3
seb03 - EmCal (ZS)	not busy	0.00%	1077466	11643	45041	intt4
seb04 - EmCal (ZS)	not busy	0.00%	1077476	11801	45041	intt5
seb05 - EmCal (ZS)	not busy	0.00%	1077486	11934	45041	intt6
seb06 - EmCal (ZS)	not busy	0.00%	1077497	11298	45041	intt7
seb07 - EmCal (ZS)	not busy	0.00%	1077507	11721	45041	mvtx0
seb08 - EmCal (ZS)	not busy	0.00%	1077518	11031	45041	mvtx1
seb09 - EmCal (ZS)	not busy	0.00%	1077529	11309	45041	mvtx2
seb10 - EmCal (ZS)	not busy	0.00%	1077538	11335	45041	mvtx3
seb11 - EmCal (ZS)	not busy	0.00%	1077552	11453	45041	mvtx4
seb12 - EmCal (ZS)	not busy	0.00%	1077559	11314	45041	mvtx5
seb13 - EmCal (ZS)	not busy	0.00%	1077568	11429	45041	
seb14 - EmCal (ZS)	not busy	0.00%	1077589	11381	45041	
seb15 - EmCal (ZS)	not busy	0.00%	1077599	11438	45041	
seb16 - HCal West (ZS)	not busy	0.00%	1077611	14470	45041	
seb17 - HCal East (ZS)	not busy	0.00%	1077626	14599	45041	
seb18 - MBD (NZS)	not busy	0.00%	1077633	10746	45041	
seb20 - ZDC/sEPD (Z)	not busy	0.00%	1077650	12822	45041	

Run Control				
06:03:57				
Running for 0:06:52				
Run: 45038				
Events: 3731555 (15997.6 Hz)				
Logging Enabled				
Close				
Pause				
End				
physics beam cosmos calib junk				
gl1daq	seb00 - EmCal	seb01 - EmCal	seb02 - EmCal	seb03 - EmCal
seb04 - EmCal	seb05 - EmCal	seb06 - EmCal	seb07 - EmCal	seb08 - EmCal
seb09 - EmCal	seb10 - EmCal	seb11 - EmCal	seb12 - EmCal	seb13 - EmCal
seb14 - EmCal	seb15 - EmCal	seb16 - HCal West	seb17 - HCal East	seb18 - MBD
seb20 - ZDC/sEPD	intt0	intt1	intt2	intt3
intt4	intt5	intt6	intt7	mvtx0
mvtx1	mvtx2	mvtx3	mvtx4	mvtx5

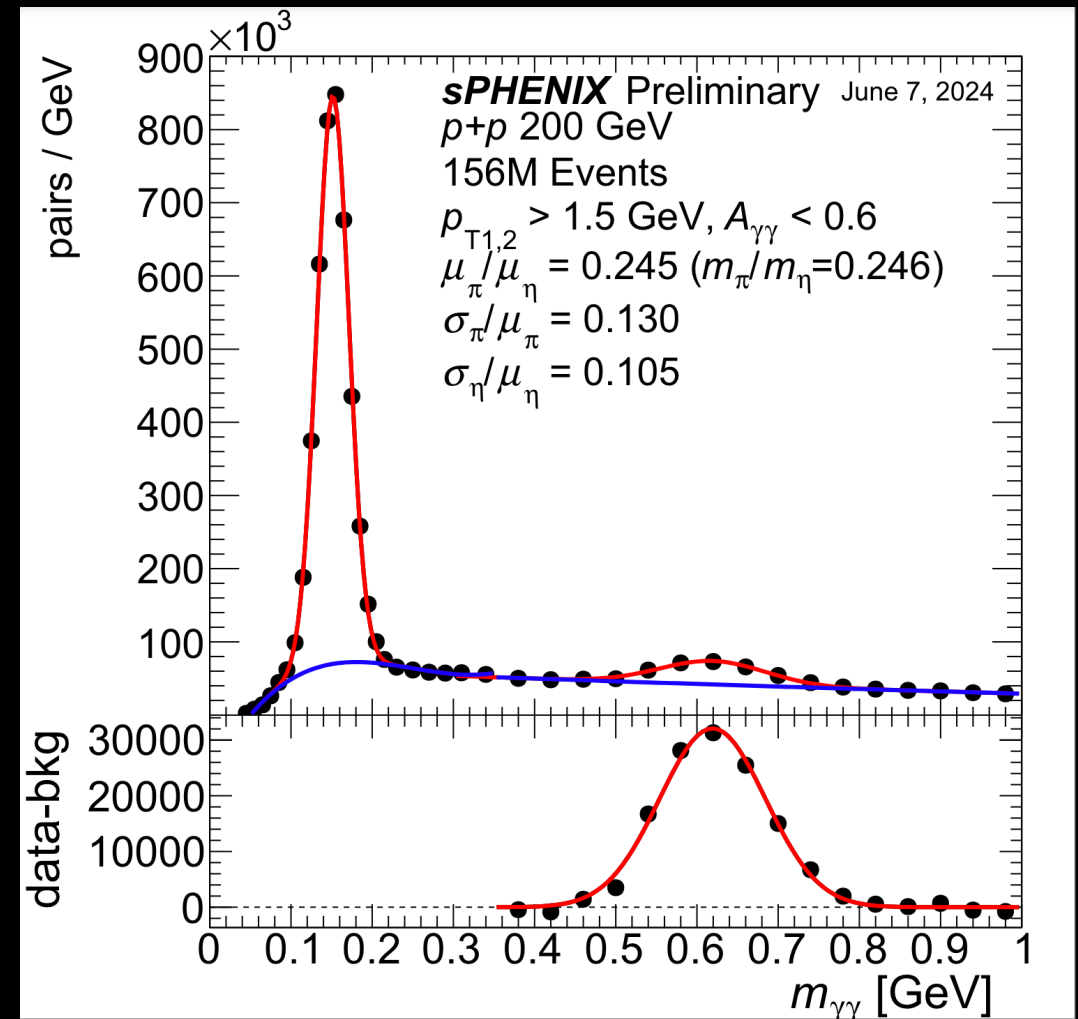


Rapid Offline Analysis

Productions beginning within
few hours of data taken

Critical for detector QA and
Level-1 trigger Look-Up-Tables

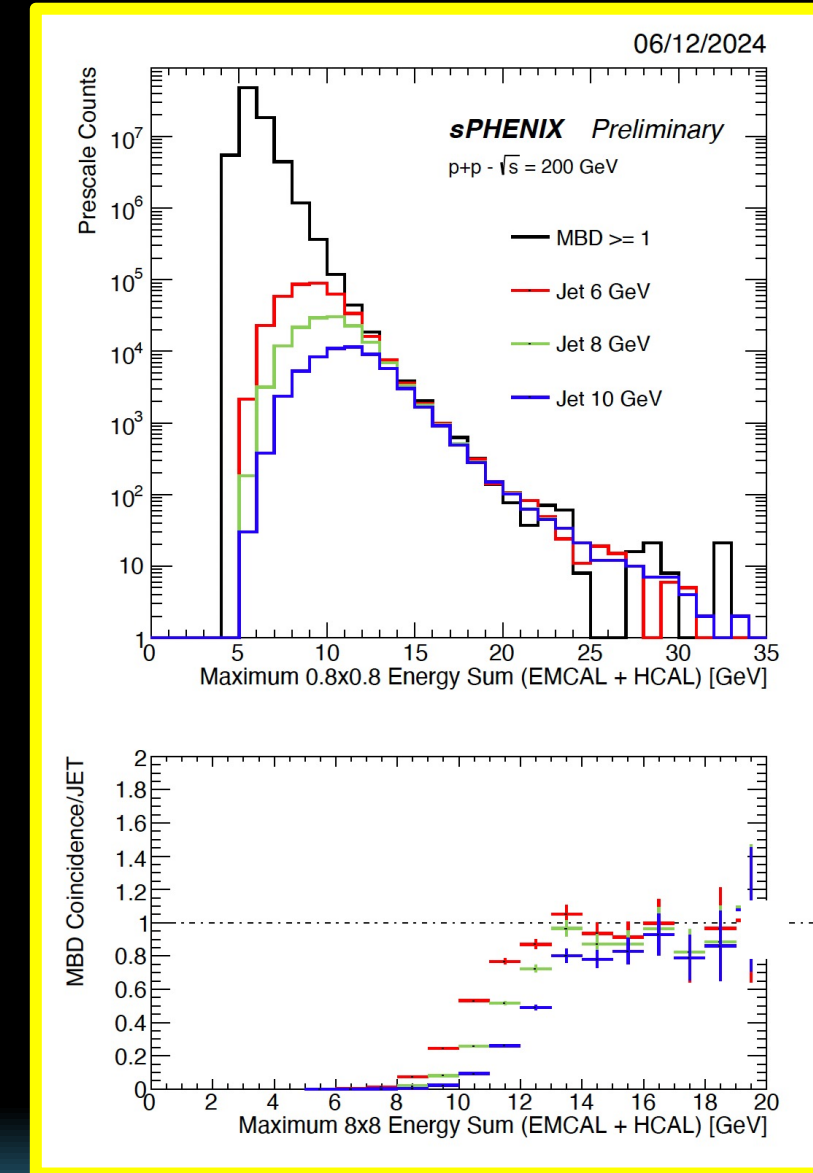
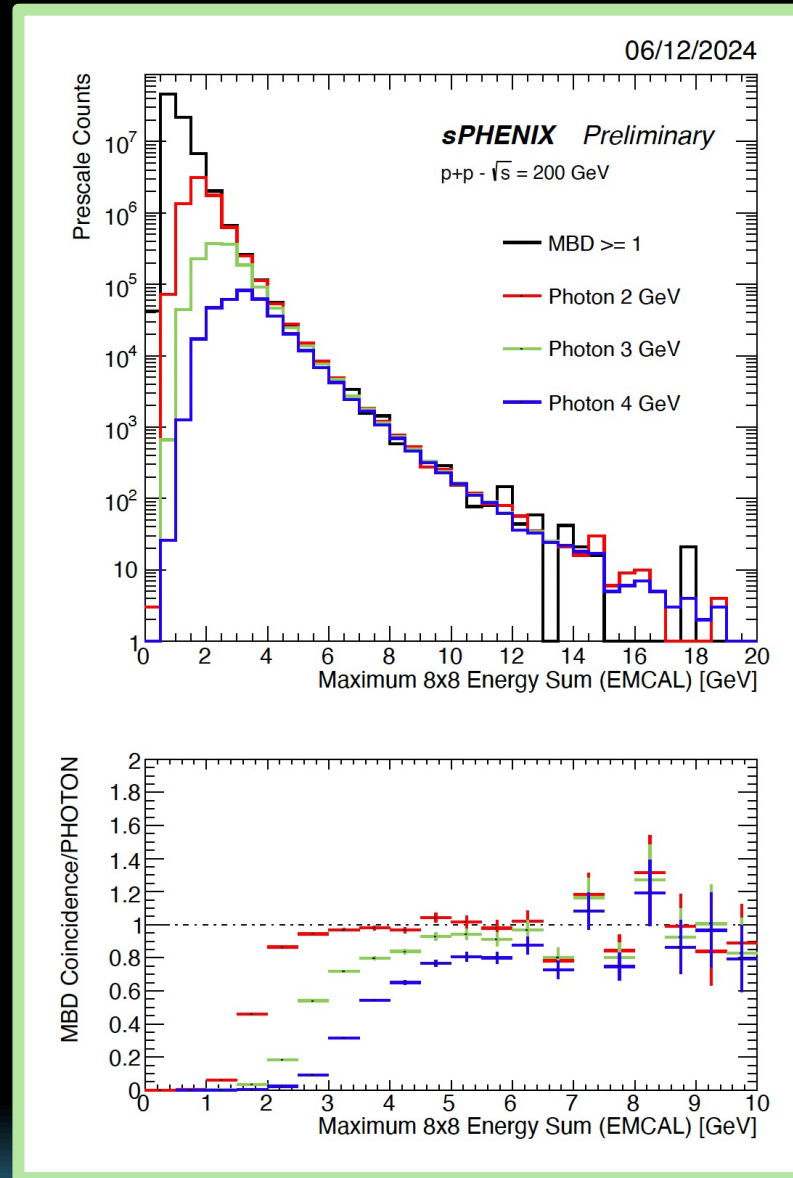
100% live HCal Towers
> 97% live EMCal Towers



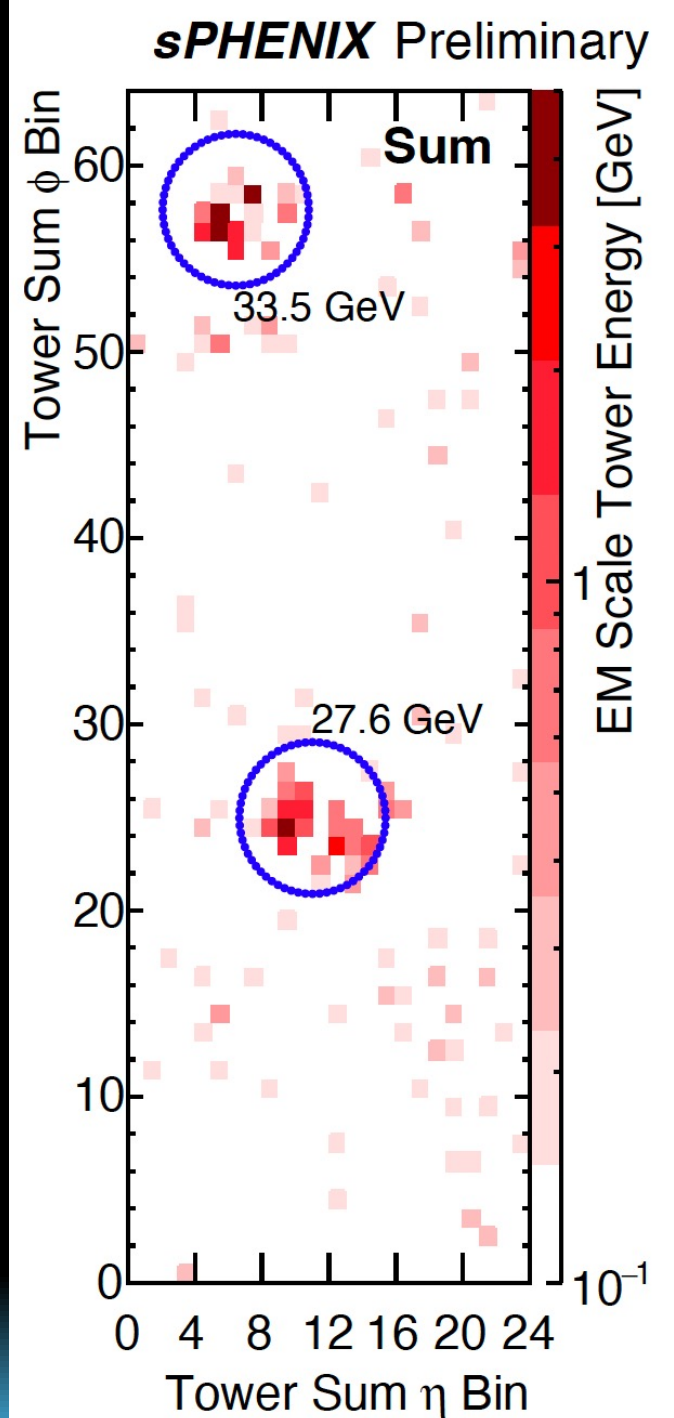
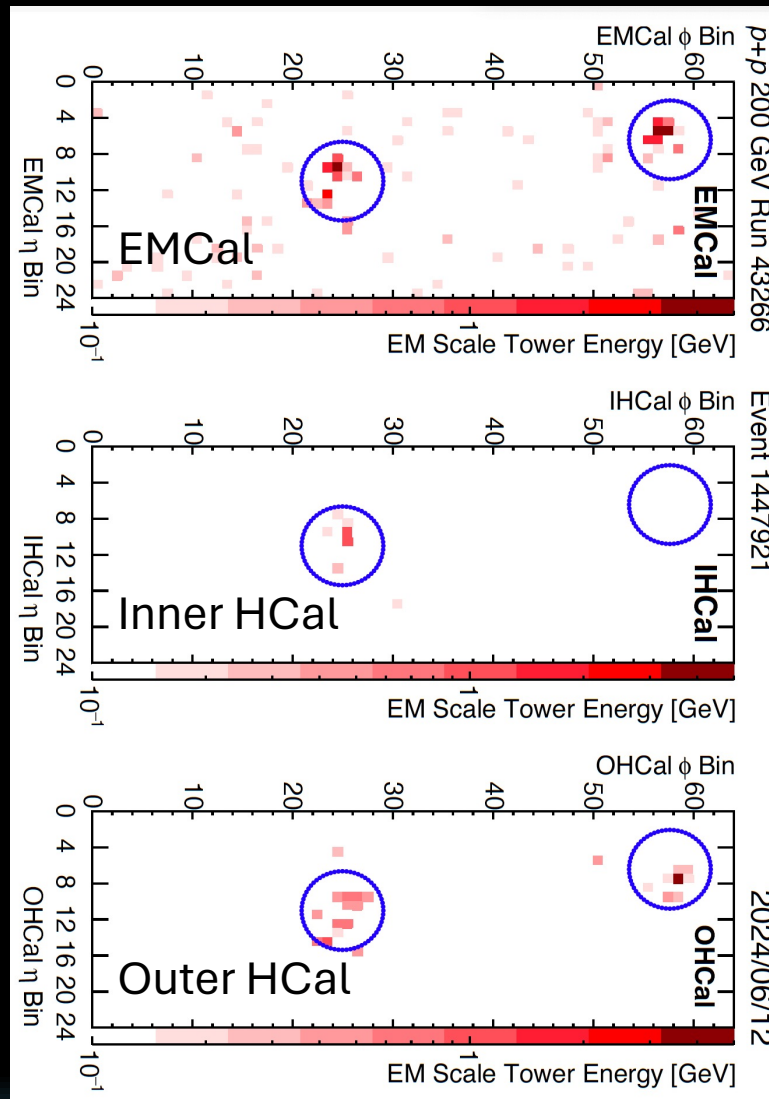
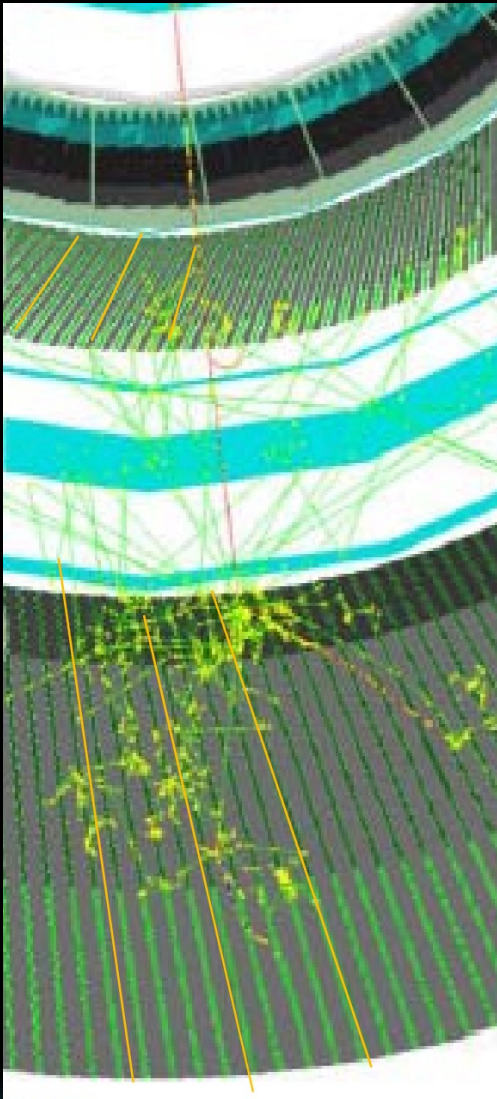
Rare Event Triggers Running

EM Calo trigger in
 $0.2 \times 0.2 \Delta\eta \times \Delta\phi$
 $E > 4 \text{ GeV}$ critical for
 full efficiency
 $Y(1s, 2s, 3s) \rightarrow ee$ trigger

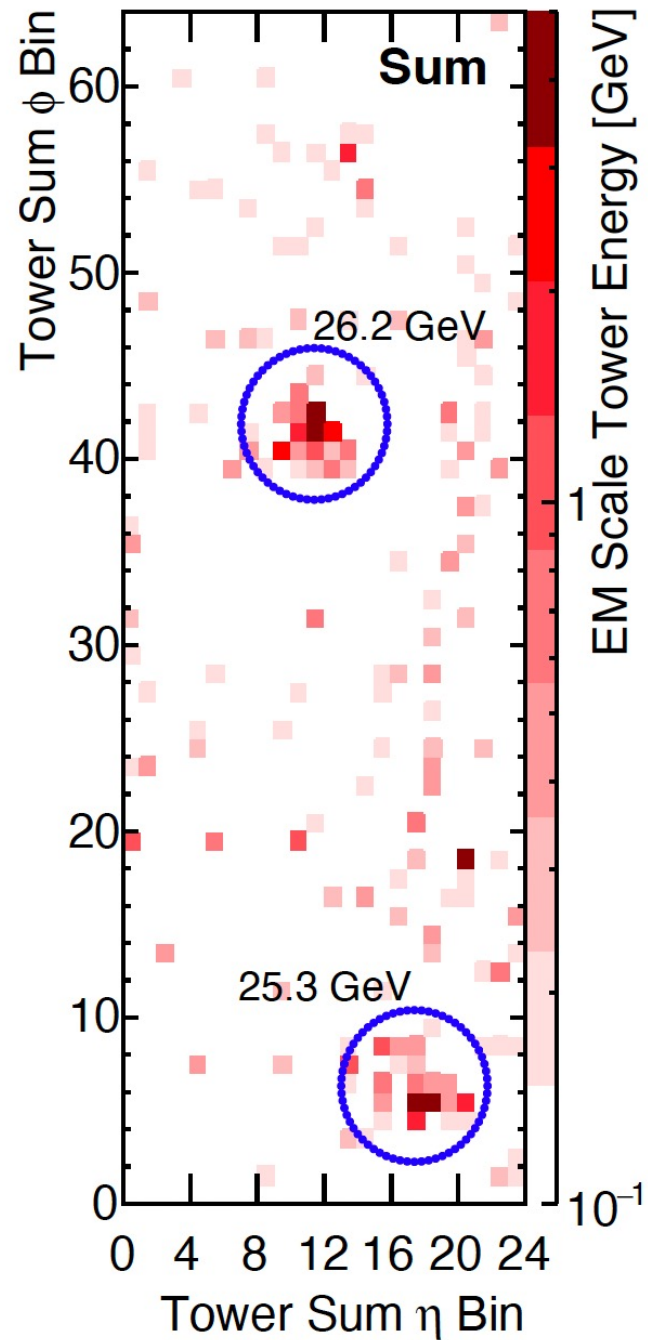
Jet trigger in
 $0.8 \times 0.8 \Delta\eta \times \Delta\phi$
 overlapping windows
 Keep everything $> 10 \text{ GeV}$



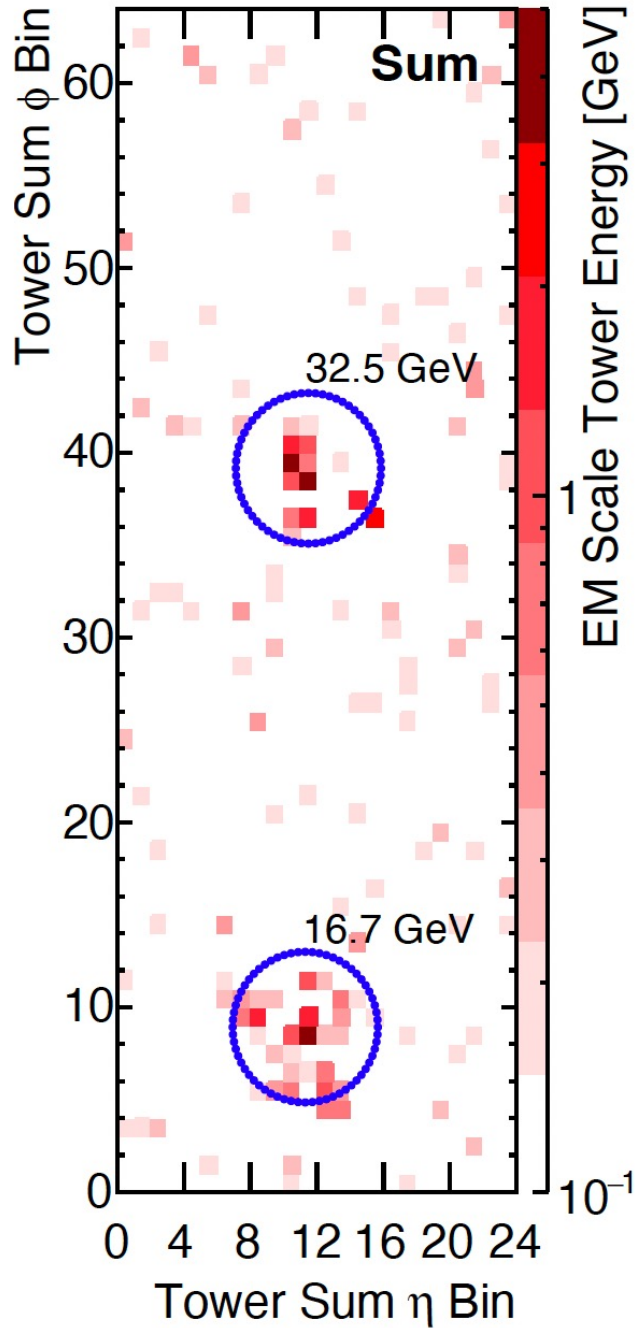
sPHENIX is a state-of-the-art jet detector



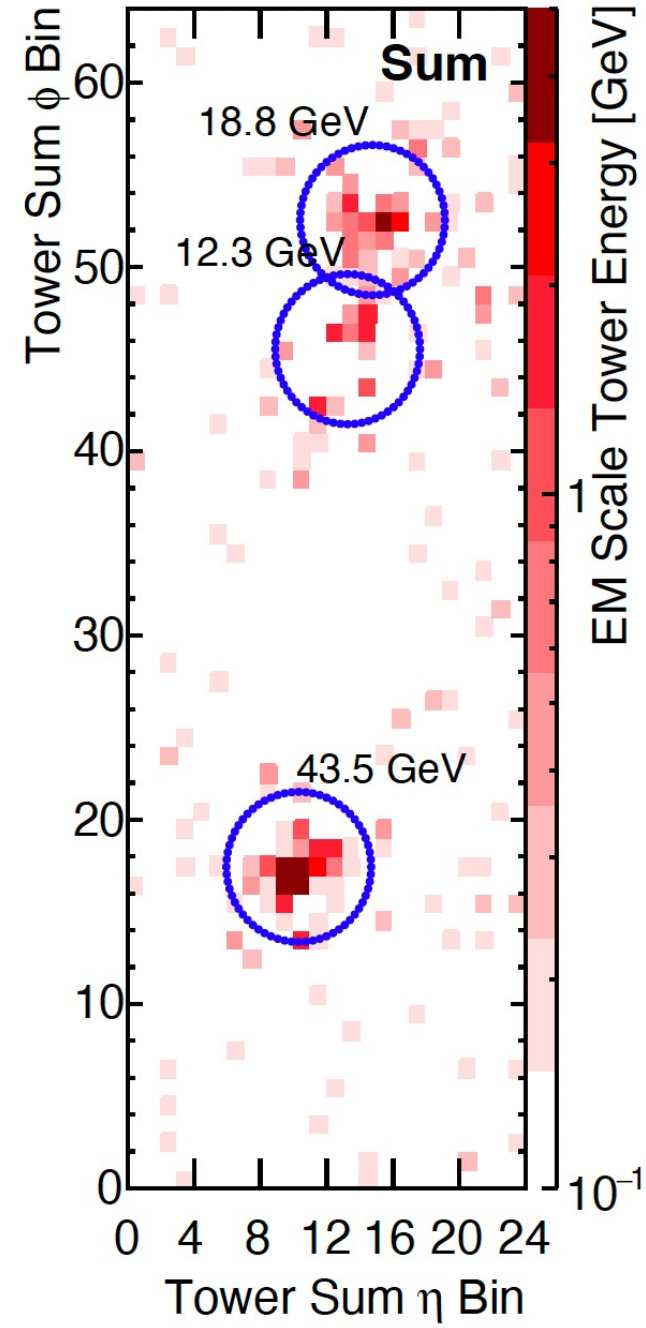
*s*PHENIX Preliminary



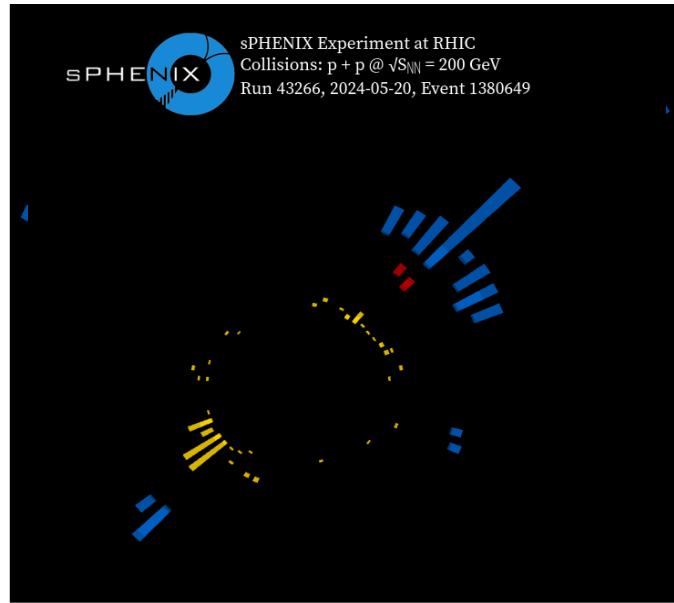
*s*PHENIX Preliminary



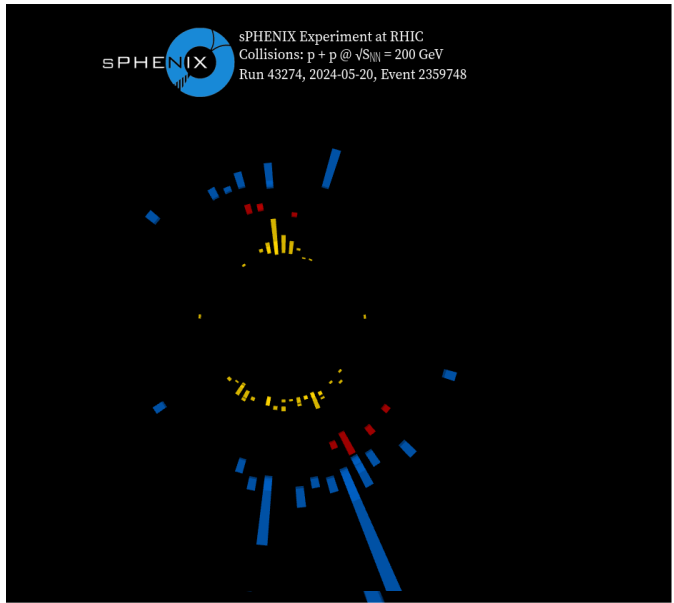
*s*PHENIX Preliminary



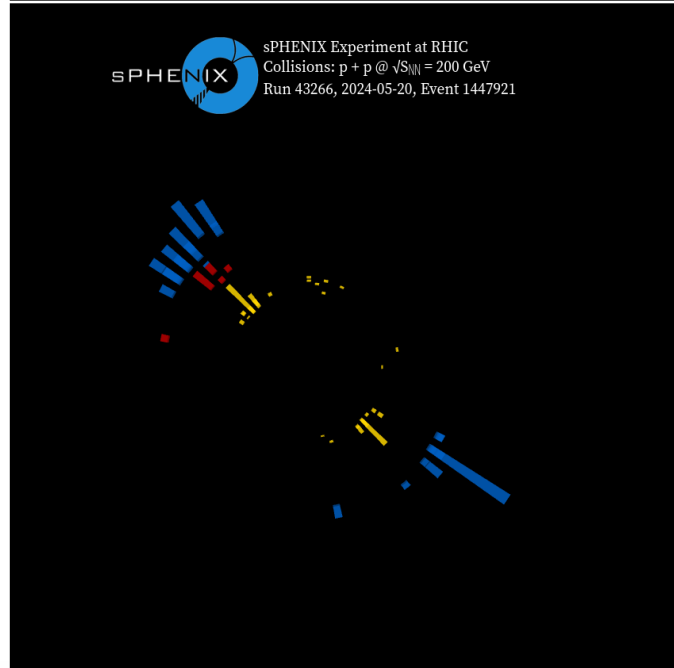
sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43266, 2024-05-20, Event 1380649



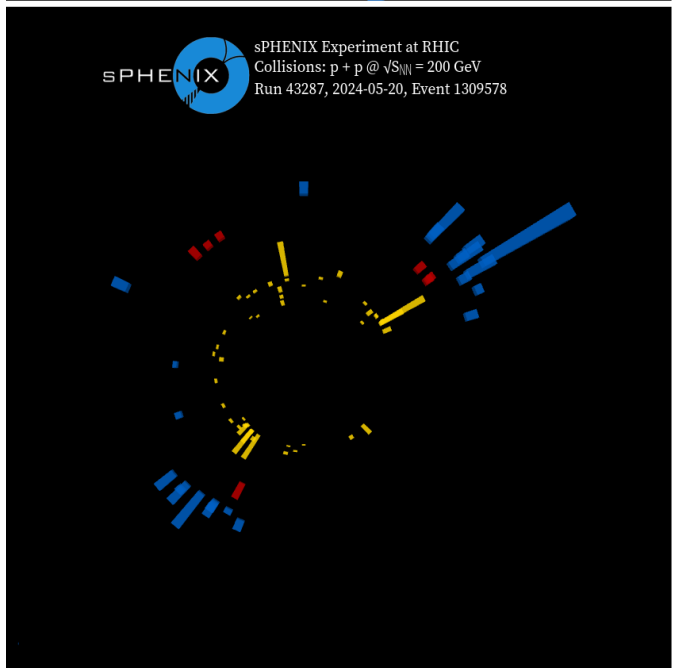
sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43274, 2024-05-20, Event 2359748



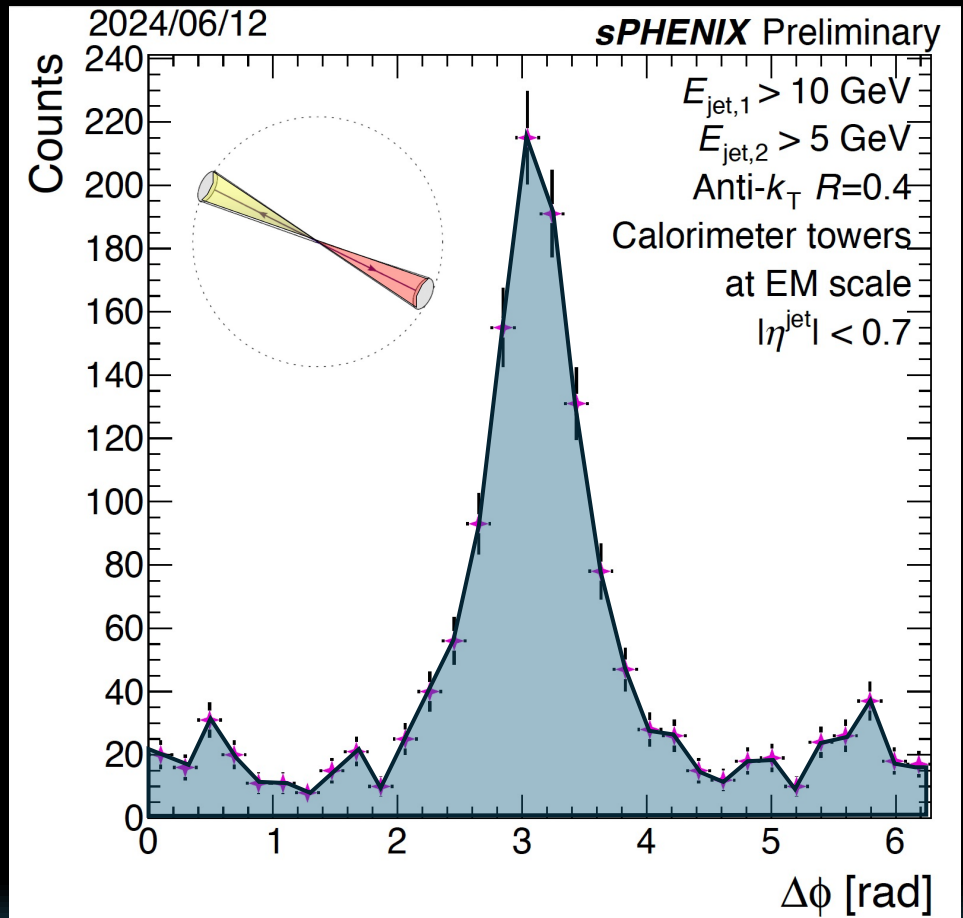
sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43266, 2024-05-20, Event 1447921



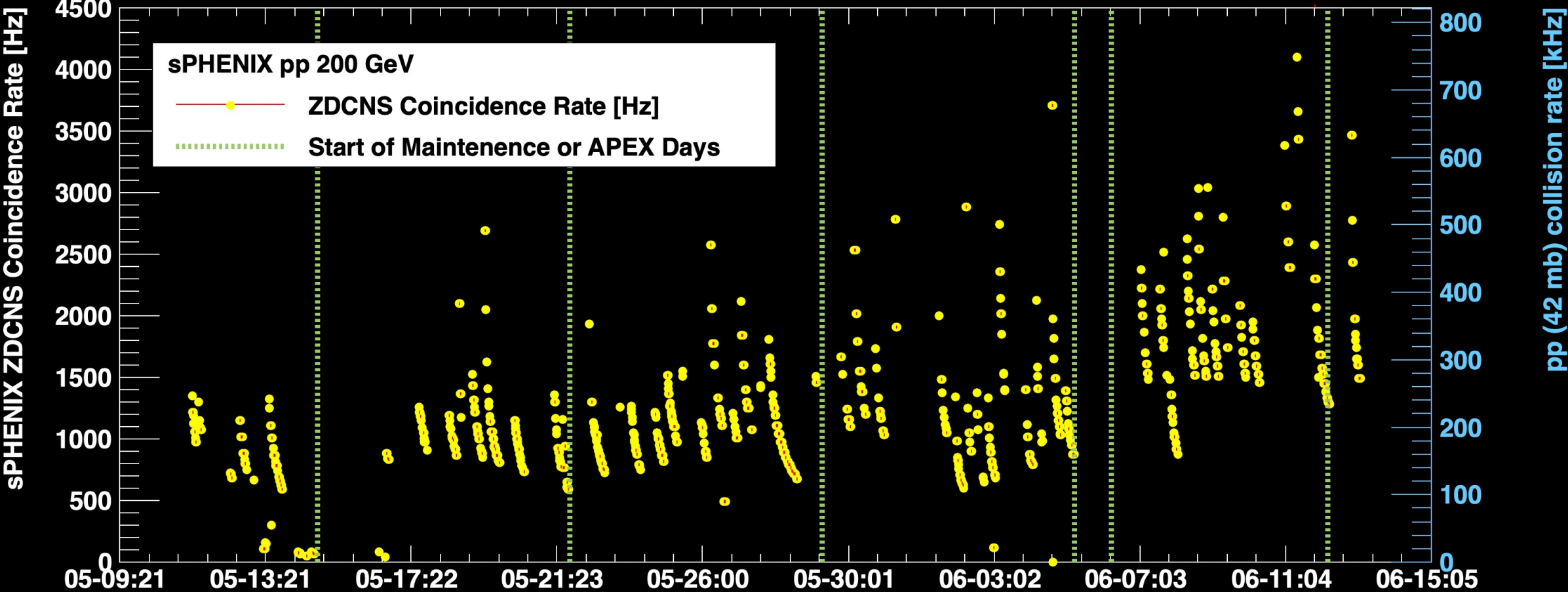
sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43287, 2024-05-20, Event 1309578



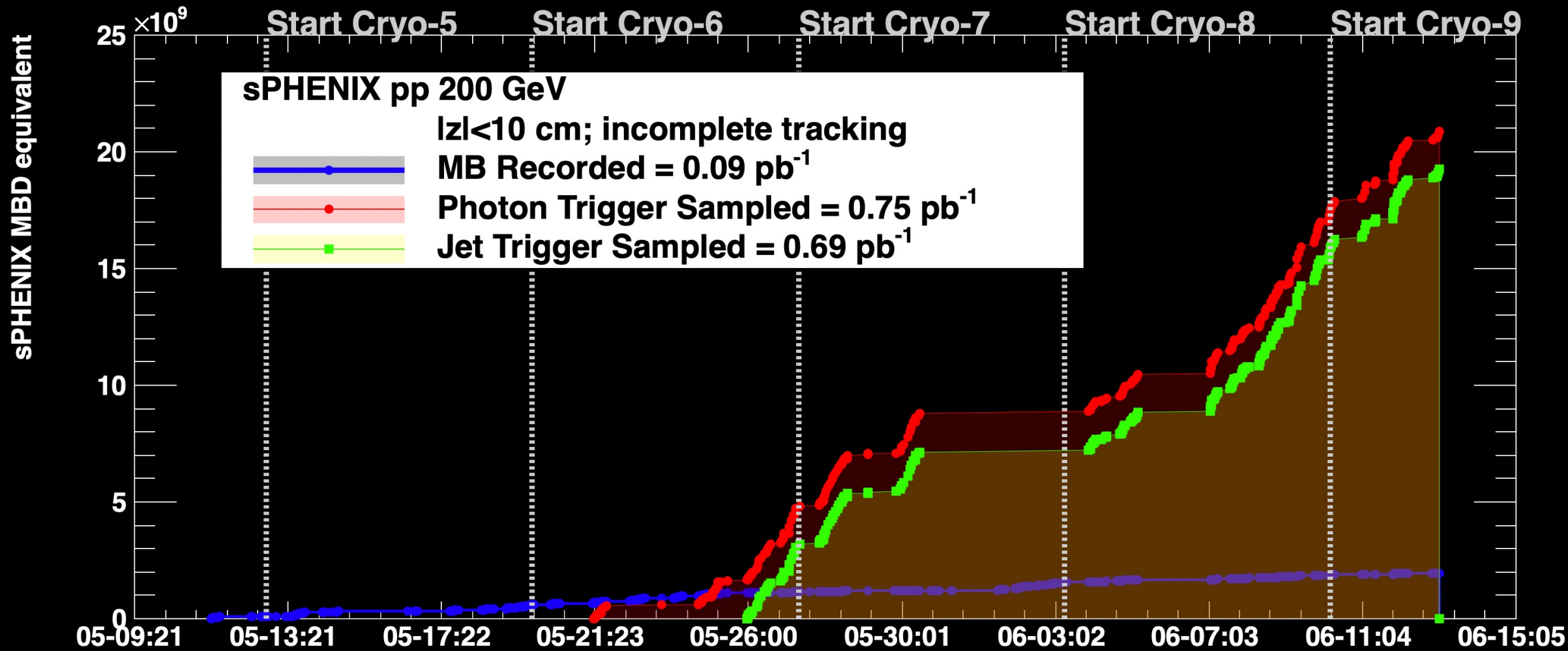
Jets in sPHENIX with $E > 20$ GeV should have opposite jet observed 80%



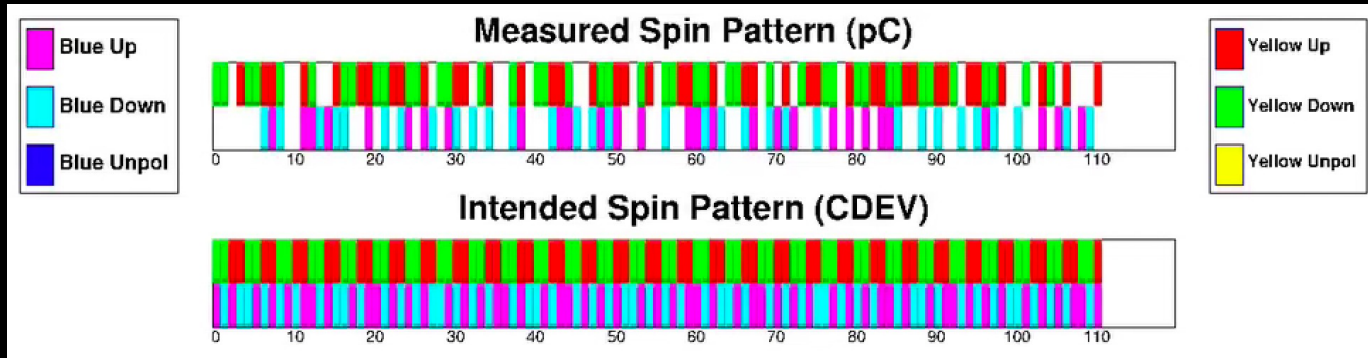
Luminosity for photons/jets so far...



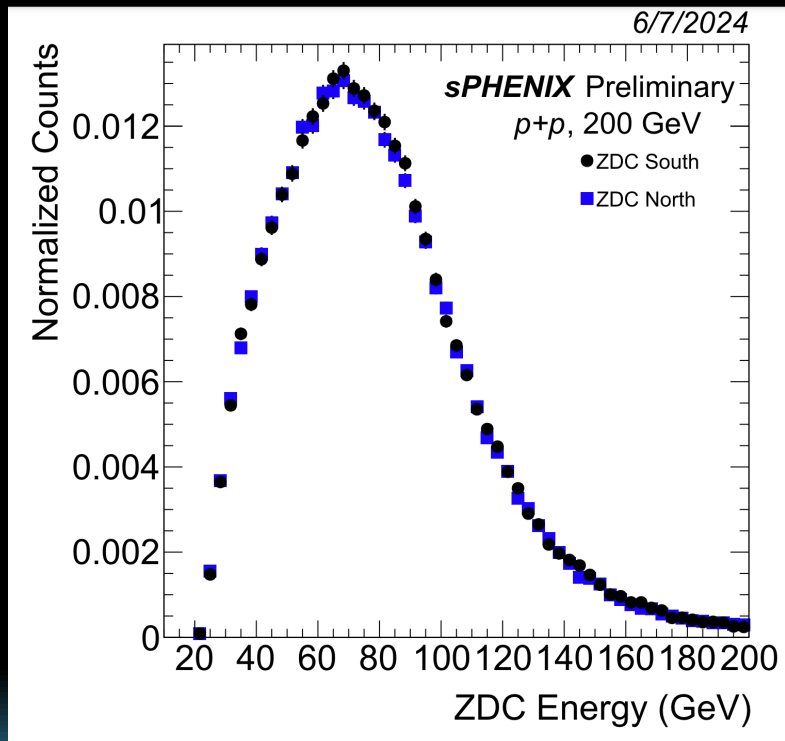
Luminosity for photons/jets so far...



sPHENIX Spin Program Ready

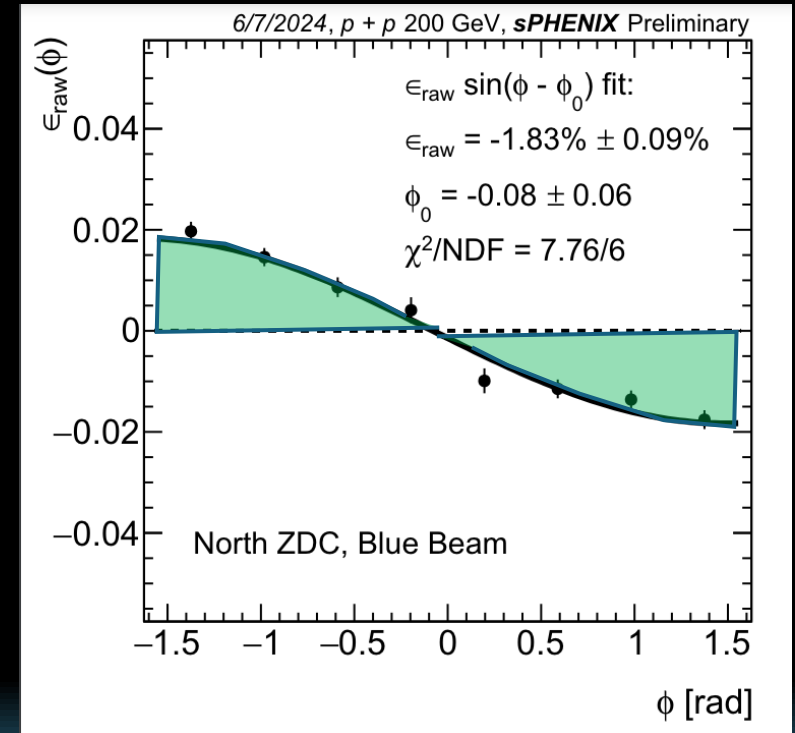


Spin patterns recorded;
scalars being tested for relative
bunch luminosities.



ZDC energies and
rates look good

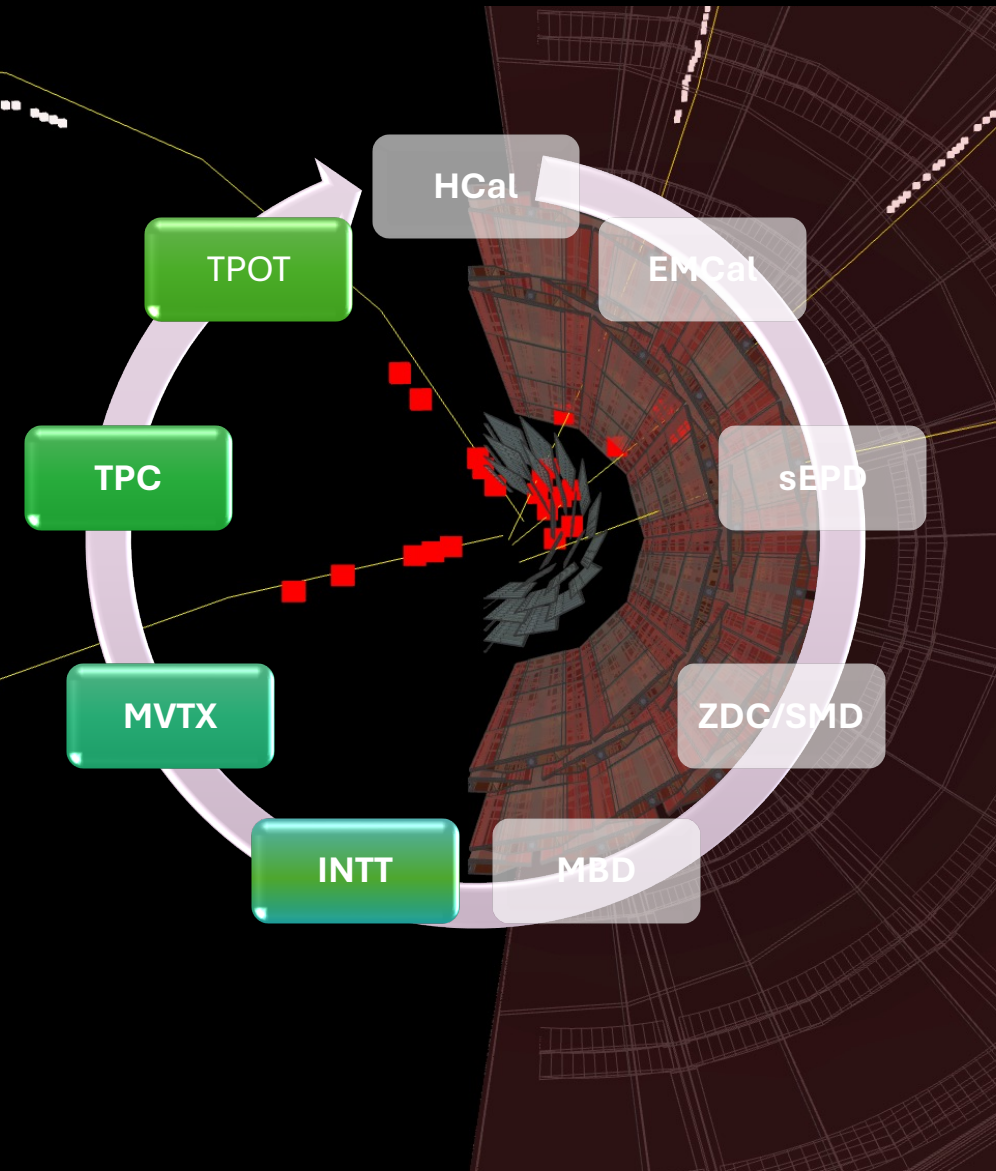
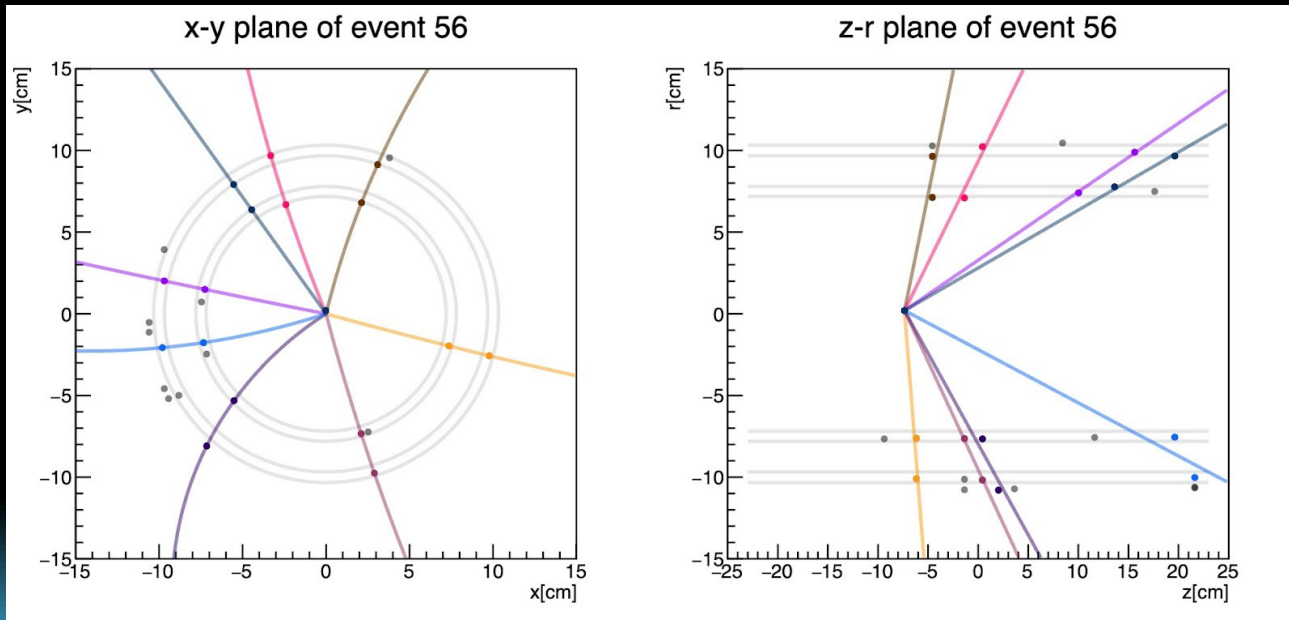
Local polarimeter
(SMD) running and
expected polarization
confirmed



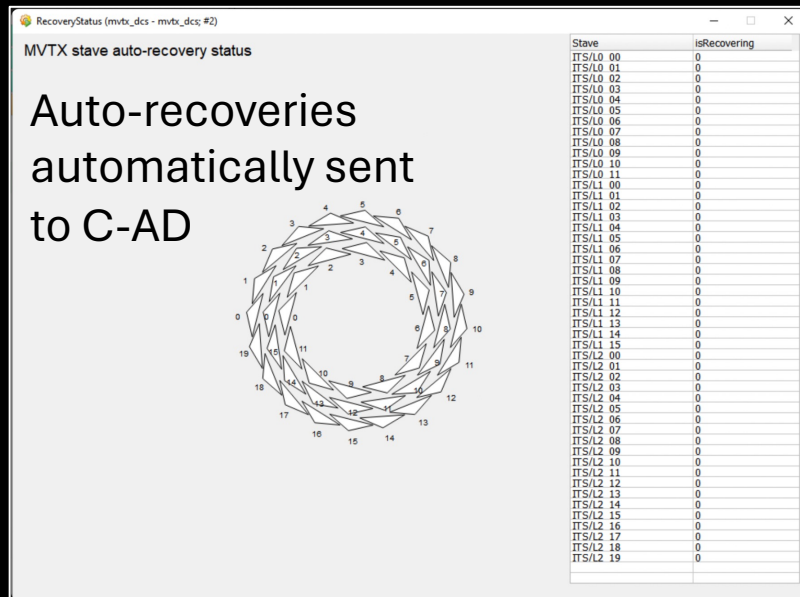
sPHENIX in two parts (II)

Tracking detectors are streaming readout, with trigger mode option.

Plan to cover all 15 kHz triggered events and another 10% of all interactions (key for open heavy flavor).



Streaming challenges



MVTX and INTT have been in readout over the past few weeks.

Occupancies look good, low noise, no MVTX auto-recovery issues.

Readout stability and thus loss of data issues.

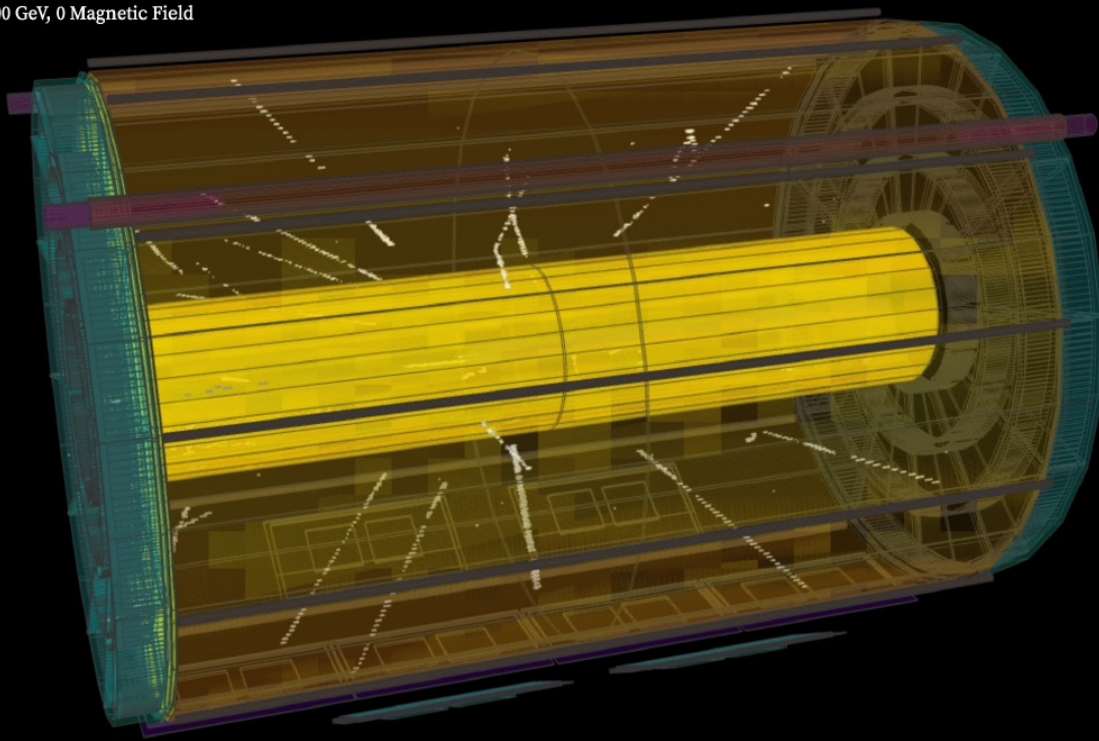
Very actively working to resolve. Also, options of readout strobe not final.

Time Projection Chamber

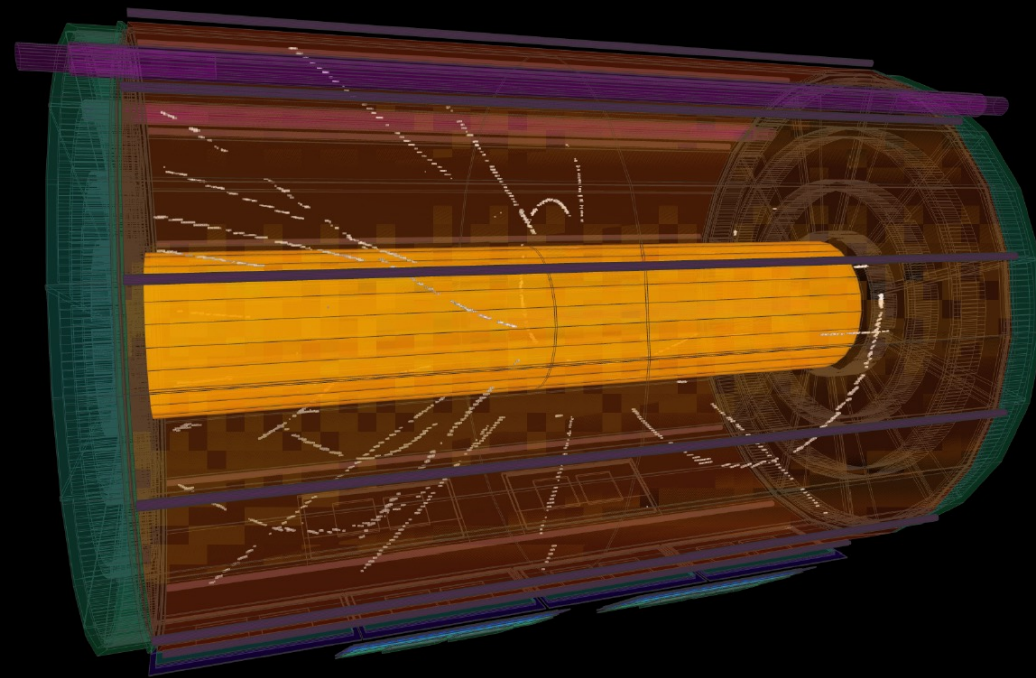
TPC runs at full voltage with good efficiency with cosmics.

With beam, picking only clusters w/ tracks from vertex yields nice event displays...

sPHENIX Time Projection Chamber
2024-04-27, Run 40630 - Event 10034
p+p 200 GeV, 0 Magnetic Field



sPHENIX Time Projection Chamber
2024-05-11, Run 41967 - Event 5055
p+p 200 GeV, 1.4 T Magnetic Field



Time Projection Chamber Challenges

After enormous effort, multiple resistor changes to mitigate problematic regions and gain GEM stack biases, we have yet to establish a “physics” working point without sparking / GEM damage.

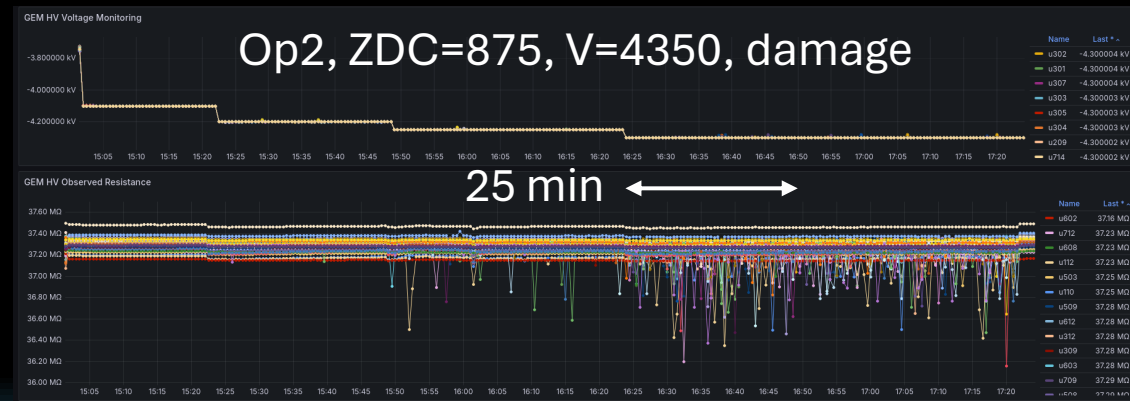
Careful process of hypothesis / test / re-assess.
It is difficult because one has no access to the GEMs and to know their exact state.



Changing to Nitrogen gas admixture to stabilize working point.

Ar: 65%
CF4: 25%
N2: 10%

Tests are ongoing.



Various diagnostic checks

Data taken in steps
with beam steered out
of collision

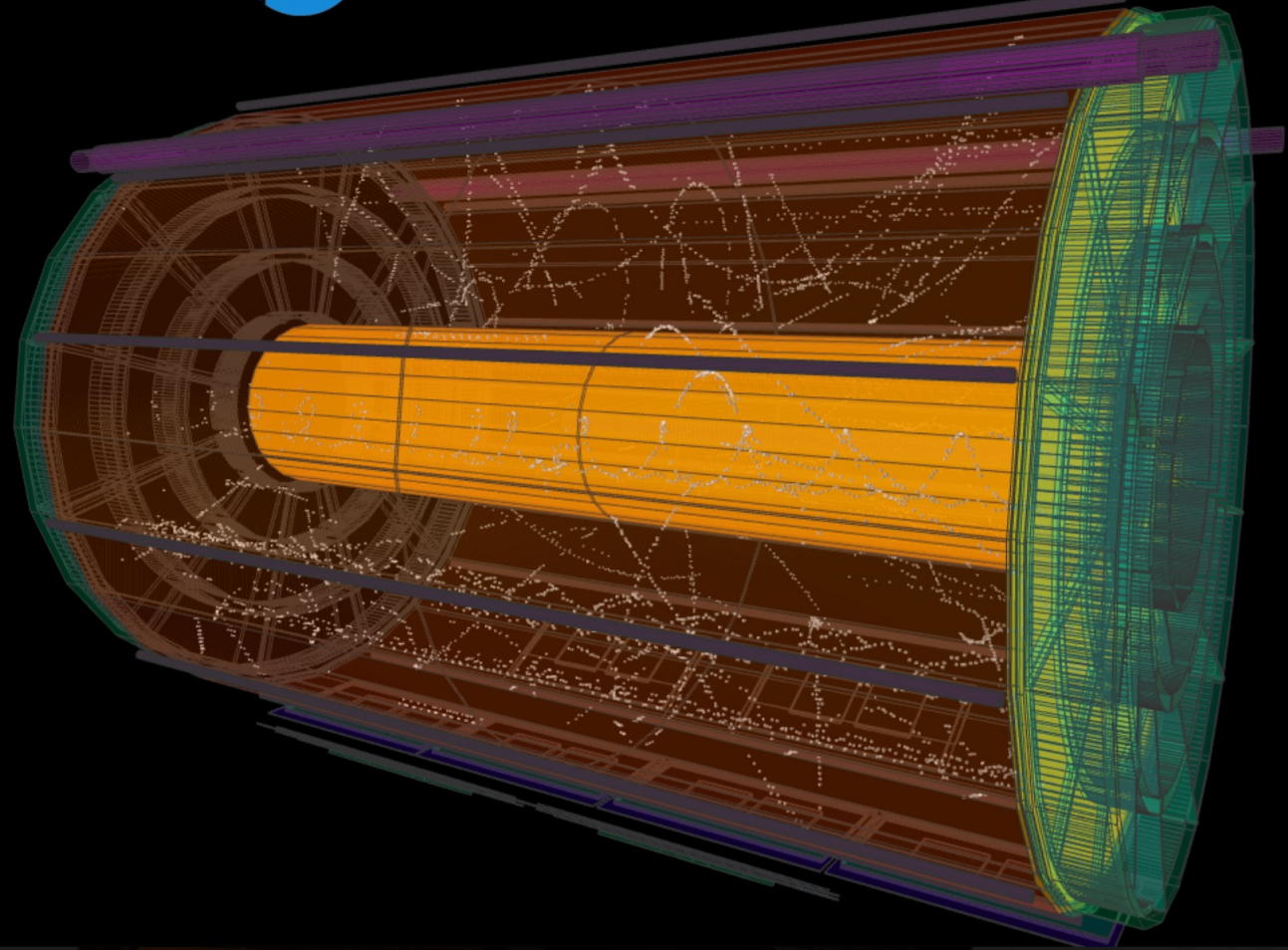
Data taken with
single beam on
each side



sPHENIX Time Projection Chamber

2024-05-25, Run 43865 - Event 1

ZDC = 0.112 kHz, $p+p$ 200 GeV, 1.4 T Magnetic Field, MBD Coin. Trigger



TPC/TPOT Firmware work

After intra-run maintenance: >99.5% TPC+TPOT FEEs alive

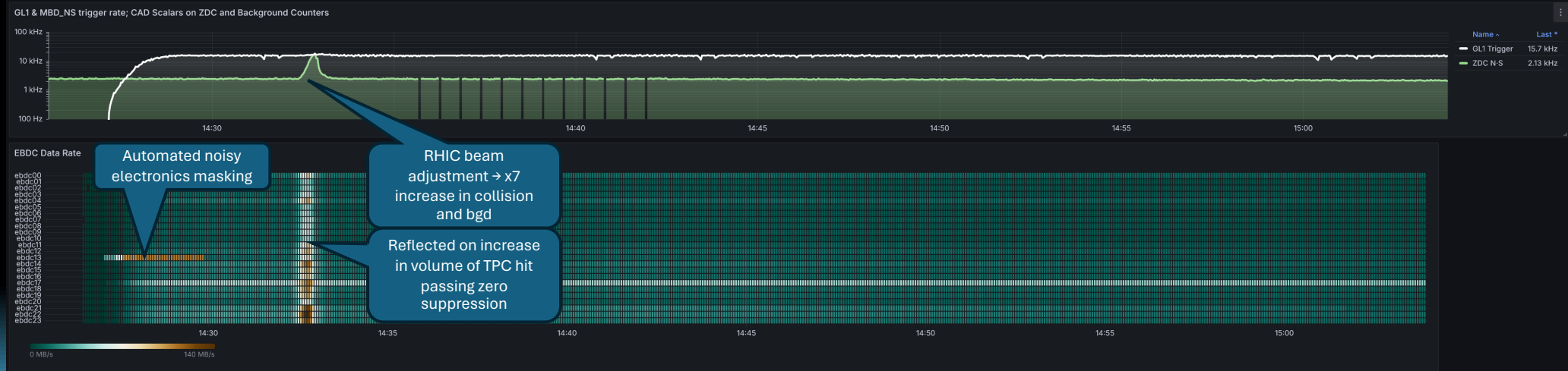
Validated zero suppression at ASIC (SAMPAv5):

Tuning of threshold/rate/efficiency on-going

TPC operation in sPHENIX physics runs for last two weeks with 15kHz trigger + 5 μ s streaming extension per trigger,

while HV / threshold still being tuned (i.e., much lower data size tested)

June 3, Run 44561, first sPHENIX 15kHz runs including TPC



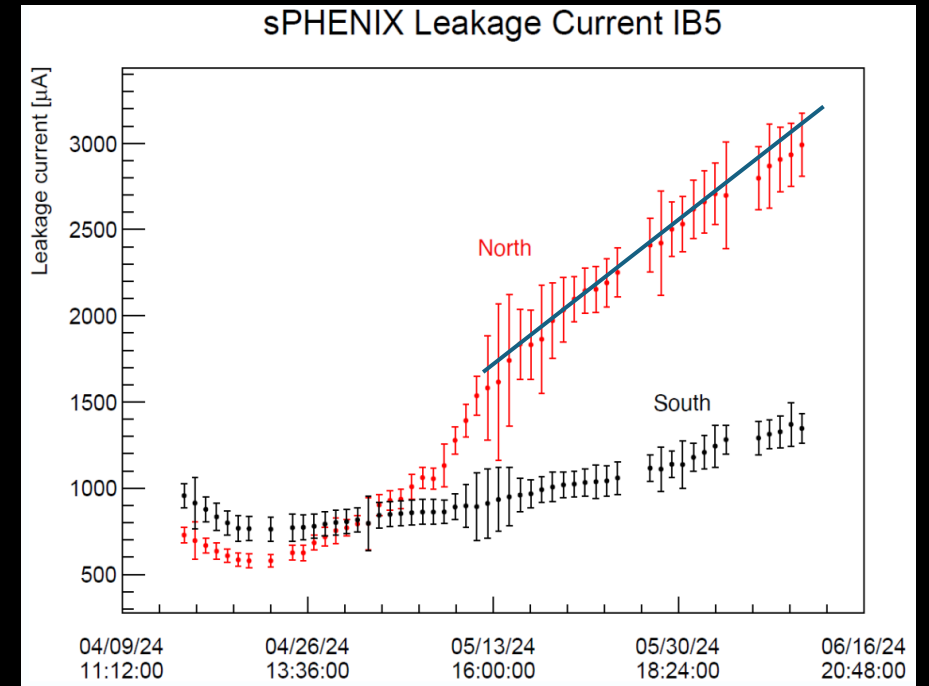
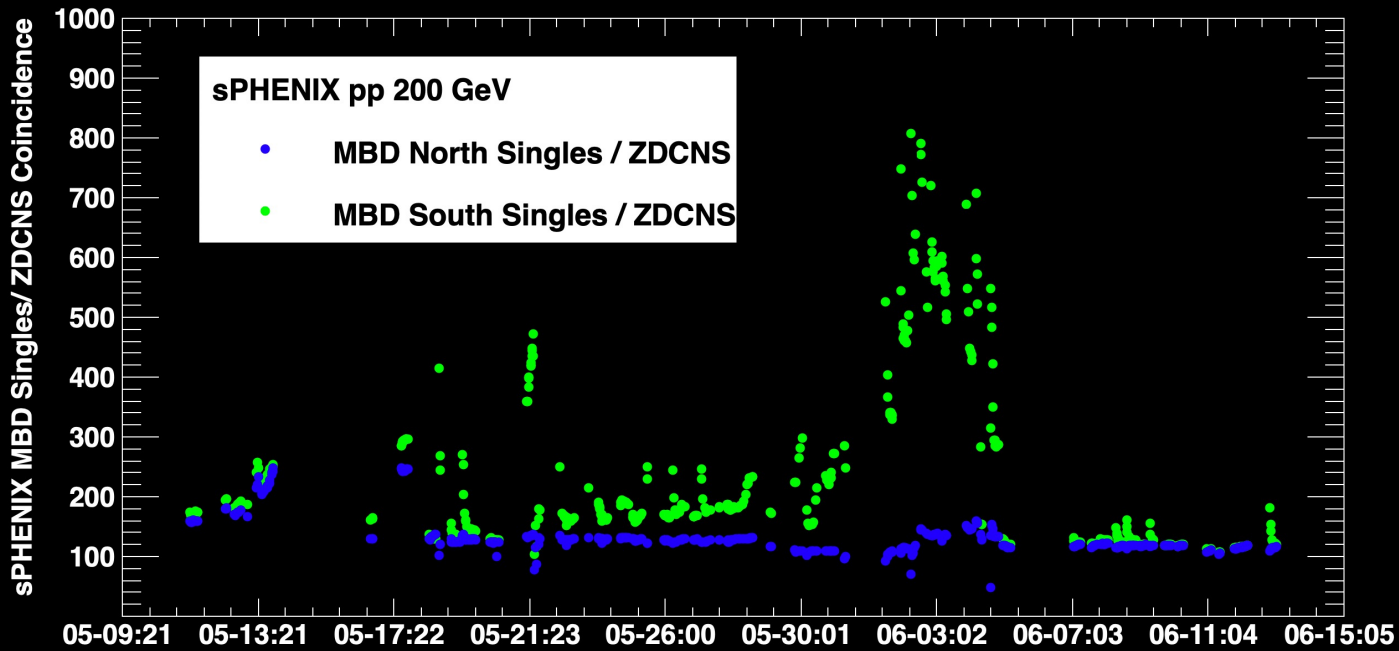
ZDC (Green) and global trigger rate (white)

TPC Data Rate sector by sector

Background issues

Last year with Au+Au, there were backgrounds in the MVTX causing enough hits to cause auto-recoveries and lockups. No issues this year!

However, large backgrounds hitting sPHENIX impacting radiation dose.



Discussions for mitigations ongoing with C-AD.

sPHENIX is feeling the love.....

RHIC Injection RHIC Ramp RHIC Store NSRL BLIP Injectors Polarization LEReC Cryo Links

Fill #
C-AD Broadcast Jun 7, 2024 05:55:49

RHIC Injection RHIC Ramp RHIC Store NSRL BLIP Injectors Polarization LEReC Cryo Links

Species: PP

Bunches: 111 / 111

RMS: [3.6] μ

Horizontal: [3.6] μ

Vertical: [3.0] μ

RHIC Store

Store Start: Fri Jun 07 03:11:41 EDT 2024

Physics Start: Fri Jun 07 03:11:41 EDT 2024

Time@store: 02:44:05

Scheduled Dump Time: Fri Jun 07 09:11:41 EDT 2024

Dump Timer: -03:15:54

STAR (corrected) ZDC rate: 8429 Hz

sPHENIX ZDC rate: 1801 Hz

Blue

Species: PP

Bunches: 111 / 111

RMS: [4.6] μ

Horizontal: [4.6] μ

Vertical: [3.9] μ

Beam Energy: 100.2 GeV

Intensity: 1.97e+13 ions

Loss Rate: 1.67 %/hr

Abort Kicker Mode: Delayed

Yellow

Species: PP

Bunches: 111 / 111

RMS: [5.4] μ

Horizontal: [5.4] μ

Vertical: [2.3] μ

Beam Energy: 100.2 GeV

Intensity: 1.60e+13 ions

Loss Rate: 1.80 %/hr

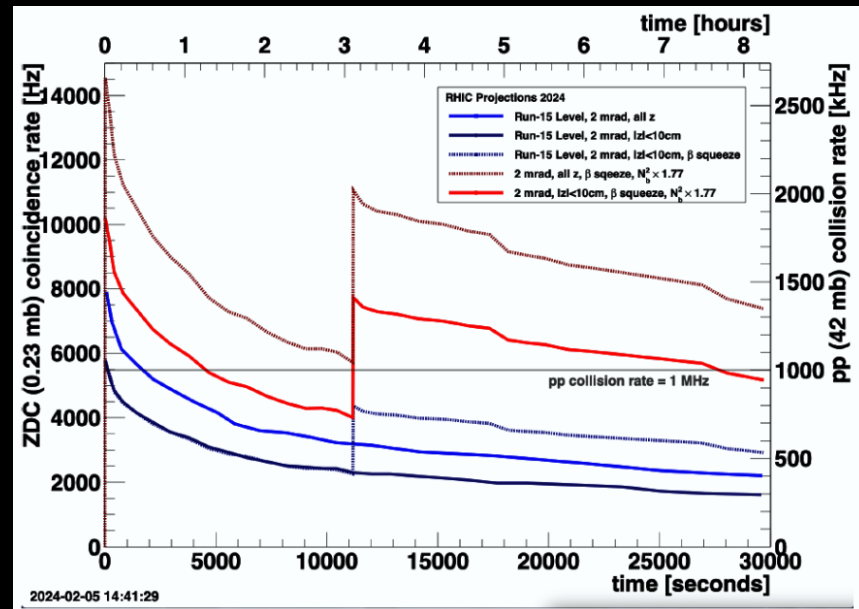
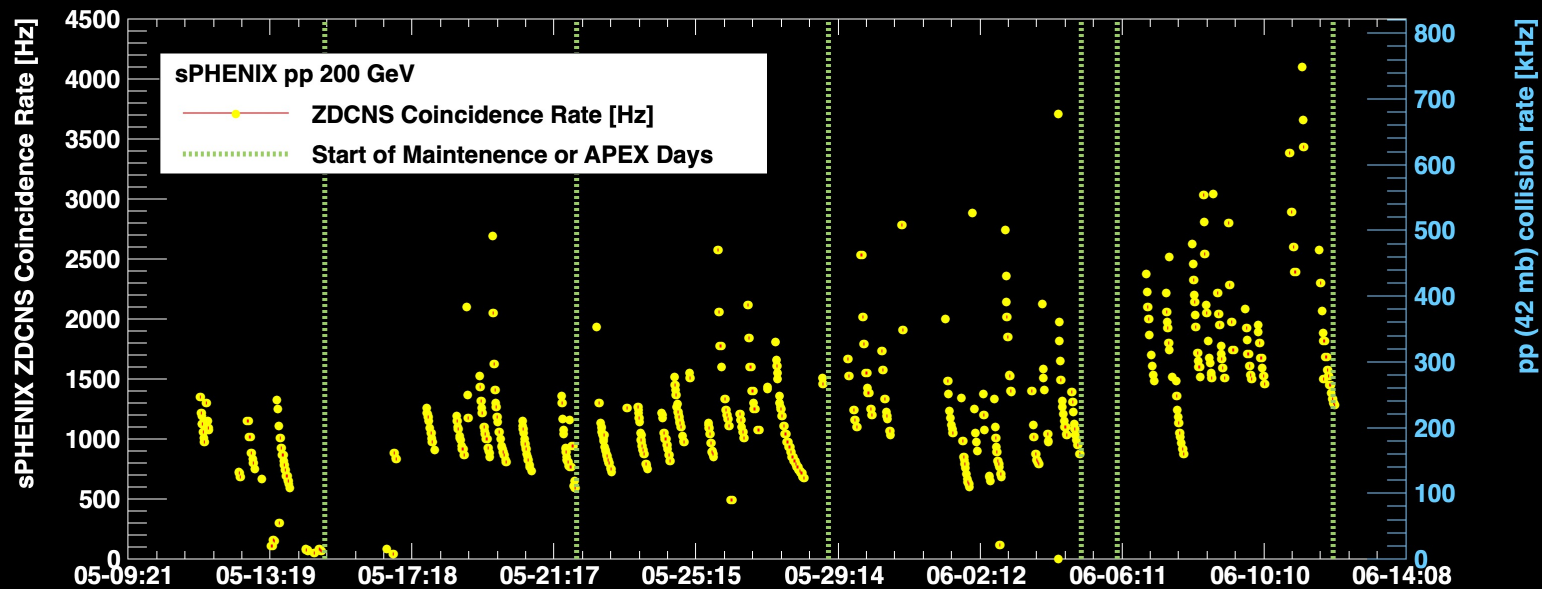
Abort Kicker Mode: Delayed

ZDC coincidence rate [kHz]

ZDC coincidence rate [kHz]

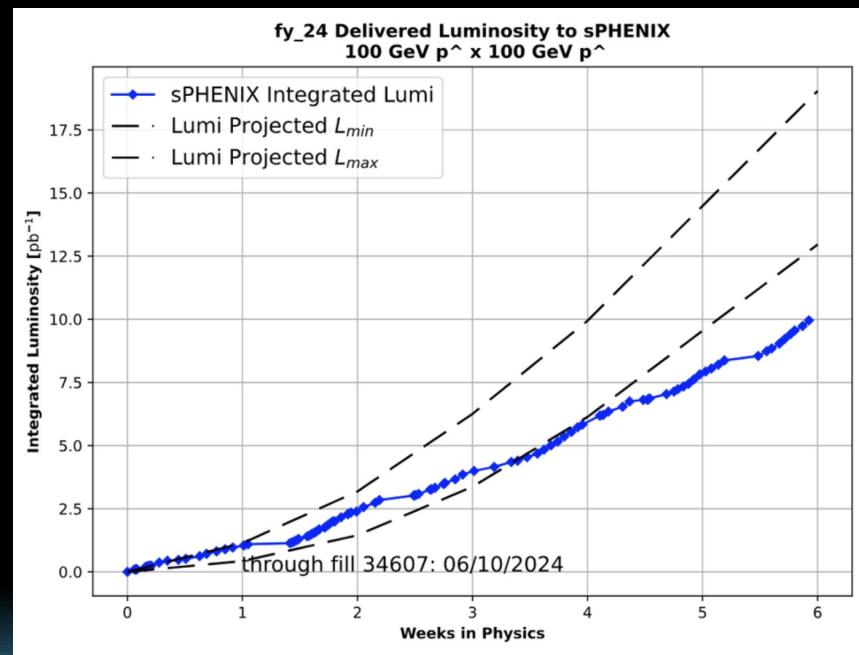
● STAR..ZDC. ● sPHENIX..ZDC.

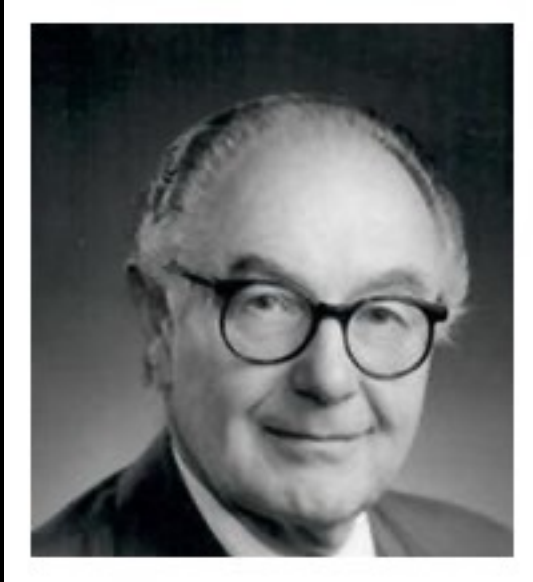
Beam loss rate [%/h]



Current luminosities yield collision rates at sPHENIX with 2 mrad of ZDCNS $\sim 2500\text{-}3000$ Hz (all z).
 2015 levels would be ~ 5000 Hz (all z)
 Goal for this run $\sim 10,000$ Hz (all z)

C-AD and sPHENIX working in parallel on luminosities, background mitigation, and to bring tracking detectors online





When things are at their toughest,
that is a good sign.

It means we are close to revealing nature's secrets,
and nature is fighting back.

Jack Sandweiss

Summary (so far)



sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43266, 2024-05-20, Event 1380649

Goal remains 45 pb^{-1} of pp 200 GeV physics!

In cryo-week #8, sPHENIX is taking jet/photon data utilizing collisions delivered by C-AD.

On schedule, working on uptime.

Inner tracking is close behind.

However, TPC remains in commissioning phase and sPHENIX is working hard to close that gap.

Extra thanks to C-AD for working so collaboratively. sPHENIX may need more running time.





6/12/24

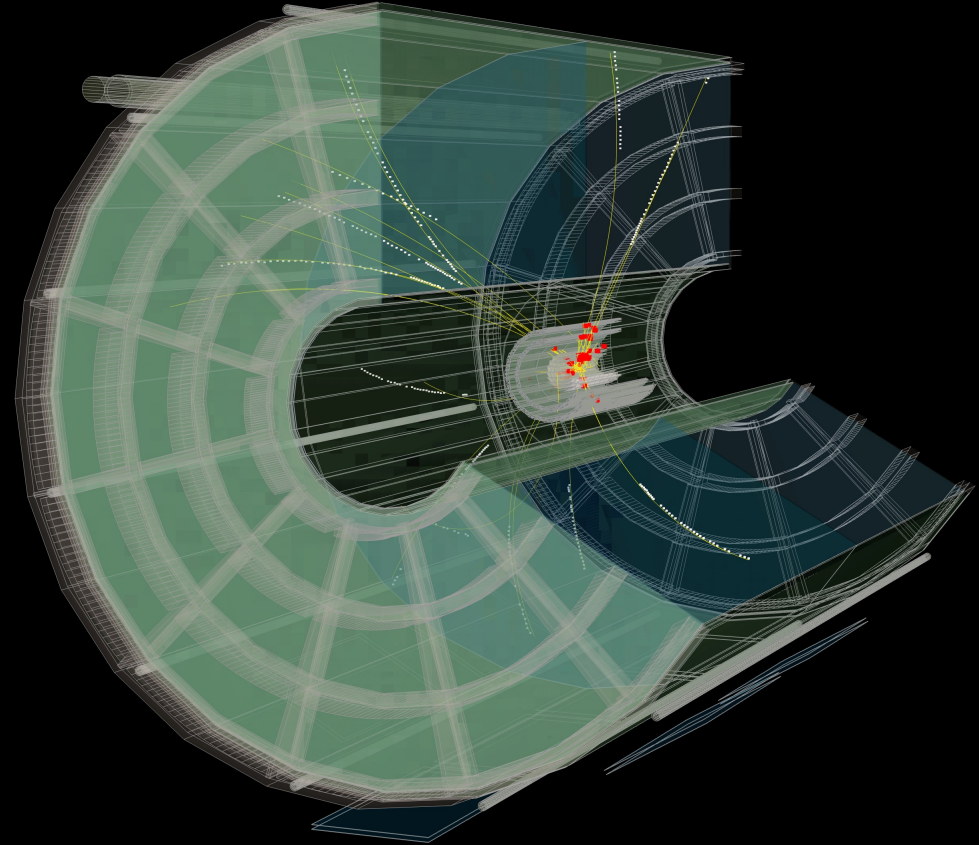
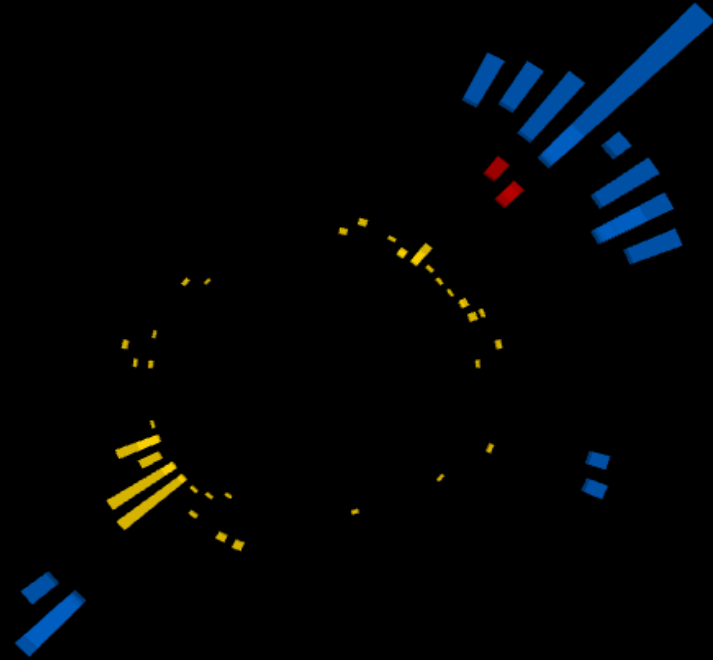
Never give up!



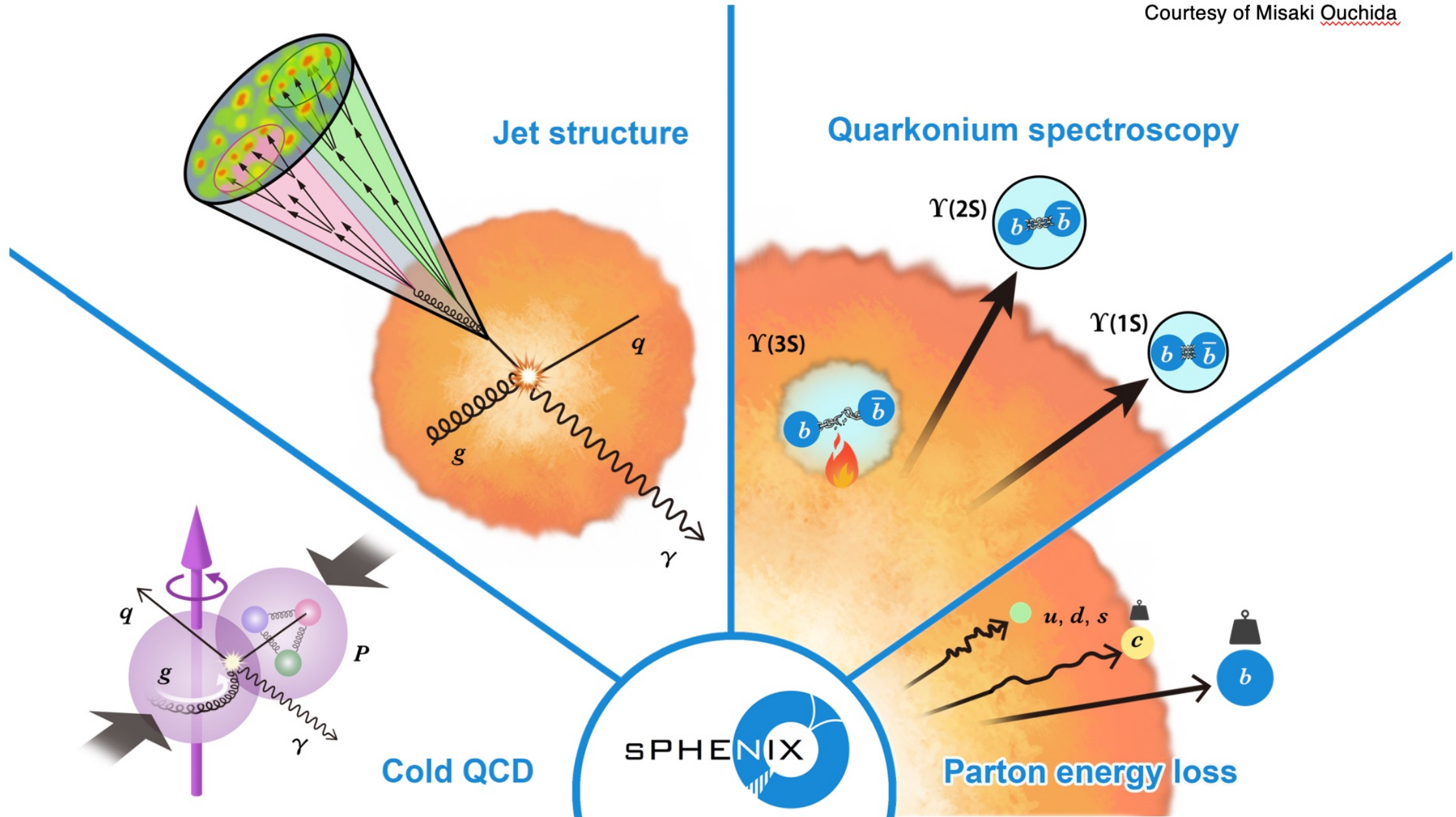
sPHENIX Experiment at RHIC
Collisions: p + p @ $\sqrt{s_{NN}} = 200$ GeV
Run 43266, 2024-05-20, Event 1380649



sPHENIX Tracking
No TPC distortion corrections
2024-6-12, Run 41989
BCO: 401966769578532
200 GeV p+p



The End





Itaru #1 at 5:30, Stefan 5:50
The rest of us, shortly thereafter

Dave, Stefan (not in photo)



DOE Mile Walk/Run Registration and Time Entry Form

The 2024 DOE Mile is the 9th annual one mile "friendly competition" walk/run between lab workers and family members across the DOE complex. Thirteen DOE labs and 1501 walkers and runners participated last year with expectations to exceed those numbers in 2024. DOE National Labs will hold races on their campuses in May.

Race results will be merged to determine overall standings.

- **BNL Onsite Walk/Run Race:** May 15
- **Report Your Virtual Race Time:** No later than May 17
- **Winners Announced:** End of May

How to Participate:

There are two options to participate: onsite and virtually.

- **Onsite:** The BNL onsite DOE mile race (walk and run) will take place on **May 15th** starting around noon (rain date May 16th). The 1-mile course will run through Brookhaven Avenue, starting at Bldg. 438 and finishing near the crossing with 5th Street. Family members *with on-site access* are also welcome to join the onsite walk/run.
- **Virtually:** Employees can also participate virtually in a "do-it-yourself" race. Simply measure a mile course, race it, and submit your time using the same registration form **by May 17th**. Use a fitness app like [Strava](#) to verify your mile (a screenshot of your time is necessary when reporting the time). Sign-up now, you can come back at a later time to upload your time and screenshot.

BERA will provide prizes for the winners in each category.

DOE mile 2024 t-shirts are [available for purchase](#) (starting at \$19.99 + shipping).

Recent sPHENIX Heroes

sPHENIX Hero: Tristan Protzman

How long have you been working in sPHENIX and at what institution?

I have been working on sPHENIX since the fall of 2021 at Lehigh University.

What is the focus of your work on the sPHENIX experiment?

My primary focus and responsibility has been the construction, installation, and commissioning of the sPHENIX East Plane Detector.

Where were you born and what is your educational background before your current position?

I am from northeastern Pennsylvania, and I completed a B.S. in physics and computer science at Pennsylvania State University.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

My thesis is tentatively titled "Astrophysical anisotropy of jets in $\sqrt{s}_{NN} = 200$ GeV Au+Au and Zn+Zn collisions, which had the pleasure of presenting the current status of at Hard Probes 2023 in Aachenburg, Germany.

How did you decide to go into heavy ion or spin research?

I didn't have a clear idea what specific subfield I wanted to join when I started graduate school, but I very quickly discovered that heavy-ion physics has a blend of physics, computing, and hardware work which fit my interests very well.

What do you like to do in your spare time?

I recently have started keeping a small indoor garden with a handful of plants. In the past I haven't had much success with keeping plants alive, but this time I am using technology to help those feelings and have a Growday page set up to monitor soil and environmental conditions and aim in the midst of implementing an automated watering system.



sPHENIX Hero: Ross Corliss

How long have you been working in sPHENIX and at what institution?

This is my fifth year with sPHENIX. I joined in 2018 while a research scientist at MIT, then moved to Stony Brook University in 2019.

What is the focus of your work on the sPHENIX experiment?

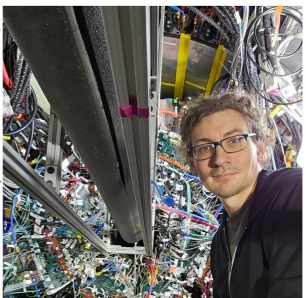
My focus right now is the correction of distortions in the TPC, which arise due to field imperfections and, especially, the presence of spacecharge in the chamber, and so very with time. I lead the TPC Distortions group, all of whom are working hard with the first datasets coming after the extensive work on the TPC. I've also had a hand in several different components of the TPC hardware that are involved in the distortions monitoring.

Where were you born and what is your educational background before your current position?

I was born and grew up mostly in the US, but my high school was on a military base in Germany. Because of that, I was technically an international student when I attended Valparaiso University, in Indiana (classmates told me my english was really impressive). I defended my PhD at MIT in 2012. I was born and grew up mostly in the US, but my high school was on a military base in Germany. Because of that, I was technically an international student when I attended Valparaiso University, in Indiana (classmates told me my english was really impressive). I defended my PhD at MIT in 2012.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

" \sqrt{s} Boston Cross Sections and Single-Spin Asymmetries in Polarized Proton-Proton Collisions at STAR" from RHIC, at 500 GeV up to 2008. My most interesting talk



sPHENIX Hero: Yeonju Go

How long have you been working in sPHENIX and at what institution?

I joined sPHENIX in the summer of 2020 when I was in University of Colorado, Boulder as a postdoc. I briefly worked on the jet reconstruction software, and then more actively worked on the eFPD performance evaluation, DAQ and trigger development. After moving to BNL as my second postdoc last summer, I started joining the TPC work.

Where were you born and what is your educational background before your current position?

I was born in South Korea and graduated from Korea University. During my PhD, I did analyses focusing on photons and jets for the CMS experiment. Afterwards, I joined the Colorado Boulder group as a postdoc, where I transitioned to working with the ATLAS experiment. I have measured photon-tagged jet RAA and jet-hadron correlations in photon+jet events with ATLAS.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

My thesis title was "Production of isolated photons in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the CMS detector at the LHC". As a BNL postdoc, I was awarded the "Goldhaber Distinguished Fellowship". I had plenary talks at Quark Matter 2023 and Hard Probes 2023, both on the topic of jet-induced medium response.

How did you decide to go into heavy ion or spin research?

In high school, I was part of an astronomy club and was fascinated by stars and astrophysics. Later, during my undergraduate years, I had an internship with the heavy ion group, where I found that studying Quark Gluon Plasma is exploring the universe early a topic that had intrigued me for a long time.



sPHENIX Hero: Ben Kimelman

How long have you been working in sPHENIX and at what institution?

I've been working in sPHENIX for a bit over a year (I started in December 2022) at Vanderbilt University.

What is the focus of your work on the sPHENIX experiment?

In terms of analysis, I'm interested in jets and fragmentation and I'll be studying the energy-energy correlations in Au+Au collisions. I'm also heavily involved in the TPC distortion correction efforts and am working to finalize the average and fluctuation distortion correction.

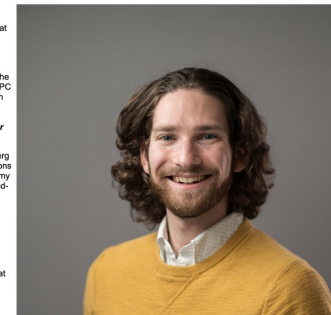
Where were you born and what is your educational background before your current position?

I was born in Toronto, Canada, but grew up in Pittsburgh, PA. I went to Muhlenberg College for undergrad, where I worked with Brett Fadern on PHENIX on simulations of p0 efficiency in the MPC. I then went to the University of California, Davis for my Ph.D, where I worked with Daniel Cebra on STAR with a focus on the STAR Fixed-Target Program and BES-II.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

My dissertation was titled: Baryon Stopping and Charged Hadron Production in Au+Au Fixed-Target Collisions at $\sqrt{s_{NN}} = 3.0$ GeV at STAR. My biggest talk was at CMQ22 and was on the detailed results of my dissertation.

How did you decide to go into heavy ion or spin research?



sPHENIX Hero: Aaron Allen

How long have you been working in sPHENIX?

I started with PHENIX in 2016 disassembling the old experiment and transferred into assembling sPHENIX.

What is the focus of your work on the sPHENIX experiment?

My work has on sPHENIX does not have one particular focus. I work on all facets of the experiment from detector work to implementing work plans.

Where were you born and what is your educational background before your current position?

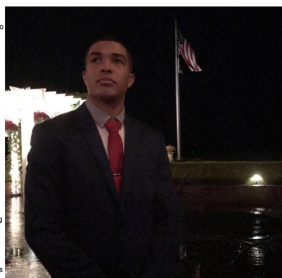
I was born and raised on Long Island. Worked at a small military contracting company on computer and monitoring systems in Hurlingham while attending Suffolk community college and volunteering as a Fire Fighter. Then I joined the Marines in 2011 as an Aircraft Rescue Fire Fighter.

What was the most exciting/challenging project you have worked on?

The most challenging project I worked on was disassembly of the PHENIX experiment. There were many challenges that arose during the disassembly. Breaking bolts that were rusted in with a hydraulic tool. When the bolts broke loose it sounded like a gun shot. The most exciting project was building and maintaining the current sPHENIX experiment.

How did you decide to go into your profession?

I like this profession because it is challenging, putting others' ideas from paper to final product is satisfying on many levels. Building anything from small intricate parts to making each detector work is exciting.



sPHENIX Hero: Jeff Hoogsteden

How long have you been working in sPHENIX?

I have been working at sPHENIX for two years.

What is the focus of your work on the sPHENIX experiment?

Currently I am working on the TPC repair and re-installing the other detectors that needed to be removed for access to the front face of the TPC. I work on mechanical and electrical systems to keep the experiment and detectors working.

Where were you born and what is your educational background before your current position?

I was born in Patagonia, N.Y. and worked at the chemistry department for 12 years as a mechanical technician before I came over to sPHENIX. Before that I worked for an electrical contractor.

What was the most exciting/challenging project you have worked on?

The most exciting project I have been working on is building sPHENIX. I was a part of the installation of the detectors and the infrastructure needed to complete the project.

How did you decide to go into your profession?

I always had an interest in mechanical assemblies and electro-mechanical work. I was lucky enough to get into this field and work at BNL to further my knowledge and experience.

What do you like to do in your spare time?

In my spare time I like to go skiing in the winter. I go camping in the spring summer and fall, and in the summertime go out on my boat to fish or just hang out at the beach with my family.



sPHENIX Hero: Cameron Dean

How long have you been working in sPHENIX and at what institution?

I joined sPHENIX in 2019 as a postdoc at Los Alamos. I was transferred to BNL in 2022 and joined MIT for my second postdoc in the summer of that year.

What is the focus of your work on the sPHENIX experiment?

My main projects just now are preparing the MVTX to be reinstalled and operational for our next run, the charged particle pseudorapidity yield analysis with Run 23 INTT data and developing a clustering algorithm for the MVTX that runs directly on a FELIX card.

Where were you born and what is your educational background before your current position?

I was born in Scotland. I studied for my master's at the University of Edinburgh and got my PhD from the University of Glasgow.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

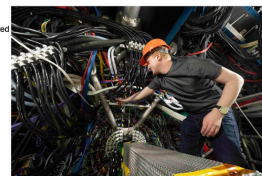
My PhD title was "Time dependent studies of B \rightarrow h+h' decays, and research and operation for the VELO project at LHCb". I received a RHIC & AGS merit award in 2021 and my biggest talk highlight was giving the heavy flavor overview talk at Quark Matter 2023.

How did you decide to go into heavy ion or spin research?

I actually ended up in heavy ion physics due to my background in silicon detectors. I had just finished my PhD in particle physics when a job opening appeared at Los Alamos where they were working on LHCb and developing a new silicon vertexer for an upcoming experiment at RHIC.

What do you like to do in your spare time?

Depending on the season, I like to hike or go skiing so living in Santa Fe was great for me. I also go to a huge variety of concerts, and try to find local breweries in all the towns and cities I visit.



sPHENIX Hero: Cheng-Wei Shih

How long have you been working in sPHENIX and at what institution?

I joined sPHENIX in May 2019 as a third year bachelor student at National Central University. Which means it has been 4.7 years as of now. Now I am in my second year of PhD program in the same institution, and continuing working on sPHENIX.

What is the focus of your work on the sPHENIX experiment?

My focus is mostly the INTT detector. INTT was in the R&D phase at the time I joined the group. So we basically built the detector from scratch, which is fun. Recently I am also working on the dN/deta analysis with run 23 INTT data.

Where were you born and what is your educational background before your current position?

I was born in Taipei, Taiwan. I got my master degree at National Central University.

What is the title of your Ph.D. or tentative title? Awards or biggest talk highlight?

As I am now in my second year of PhD program, I may not be able to answer it. The alternative I could have is, my master thesis title "Assembly and Beam Test Analysis of sPHENIX INTT Detector". I received an excellent graduate (master degree) thesis award from the Physical Society of Taiwan in 2022. My biggest talk highlight would be the flash talk at Quark Matter 2023 with the title "The Intermediate Silicon Tracker of sPHENIX".

How did you decide to go into heavy ion or spin research?

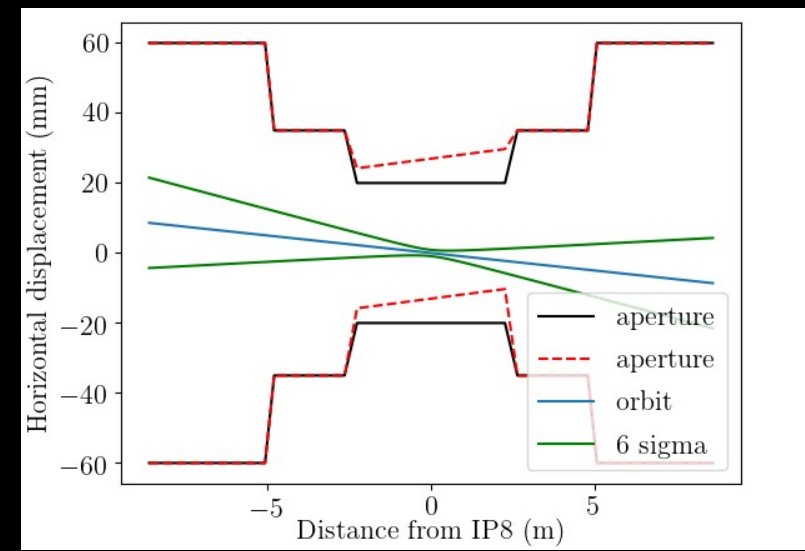
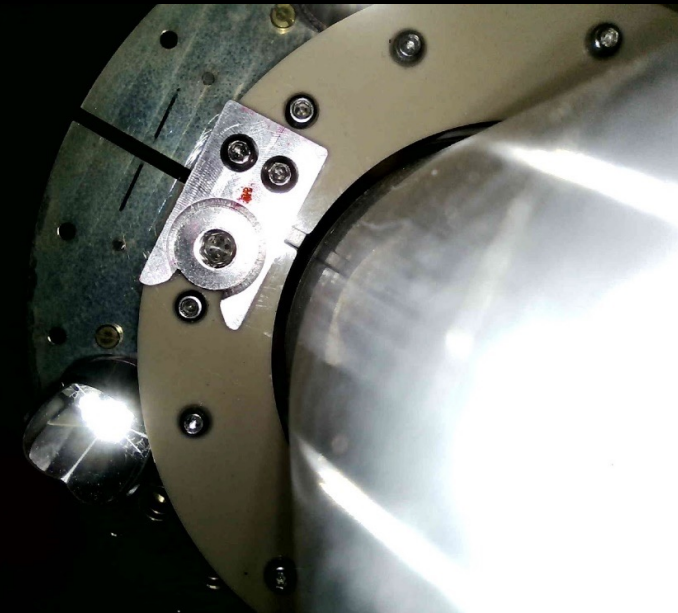
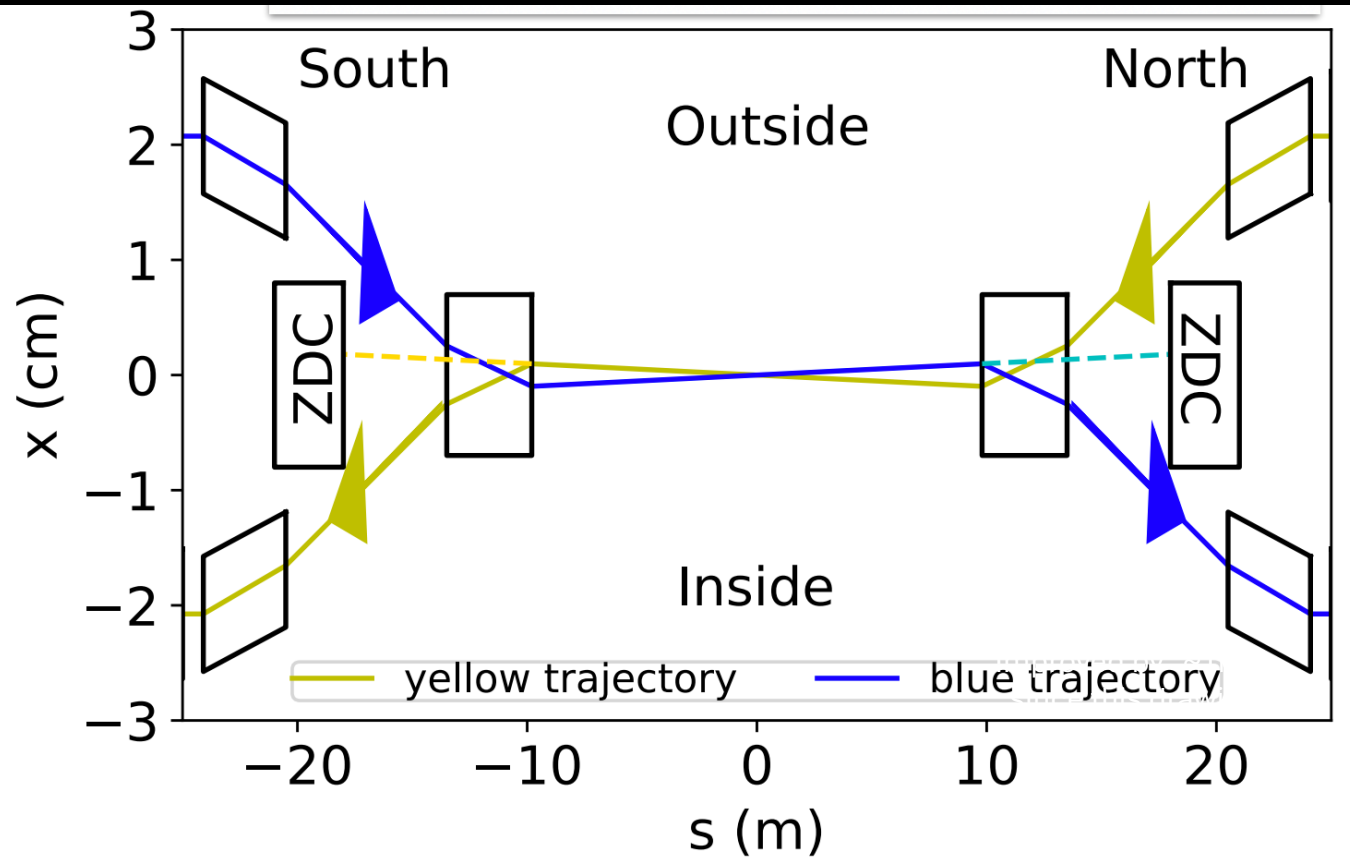
I've witnessed almost the whole progress how INTT went so far. I found that it would be interesting to see what physics INTT/sPHENIX detector can deliver. So I decided to continue working on the sPHENIX experiment.

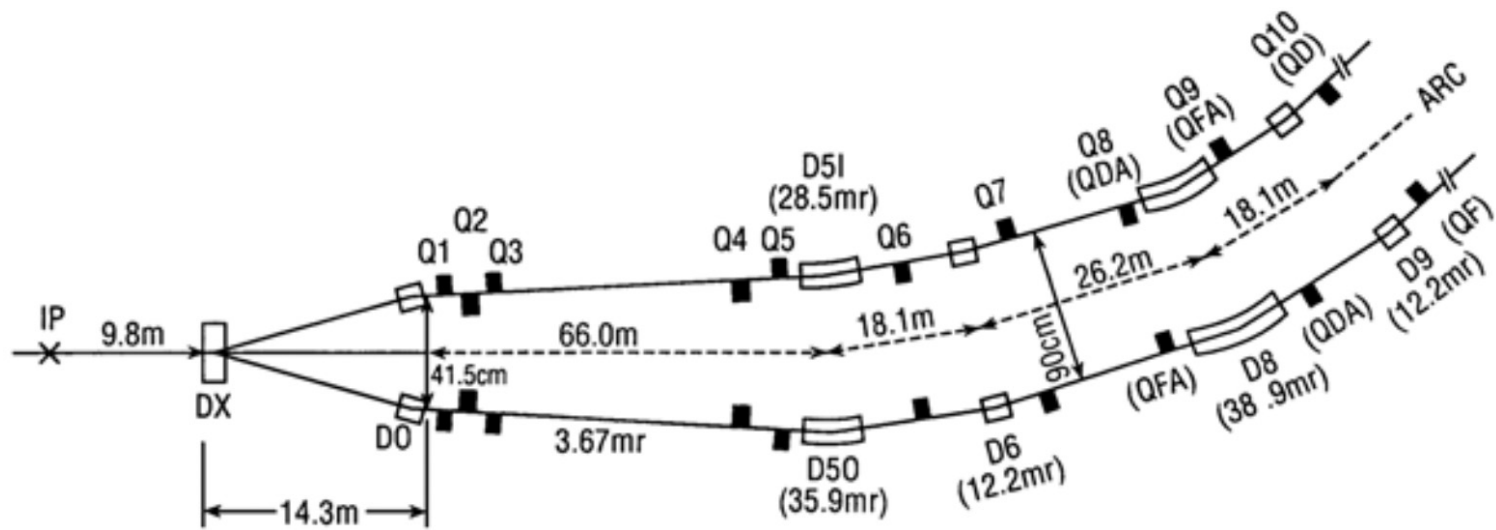


<https://www.sphenix.bnl.gov/node/1751378401>

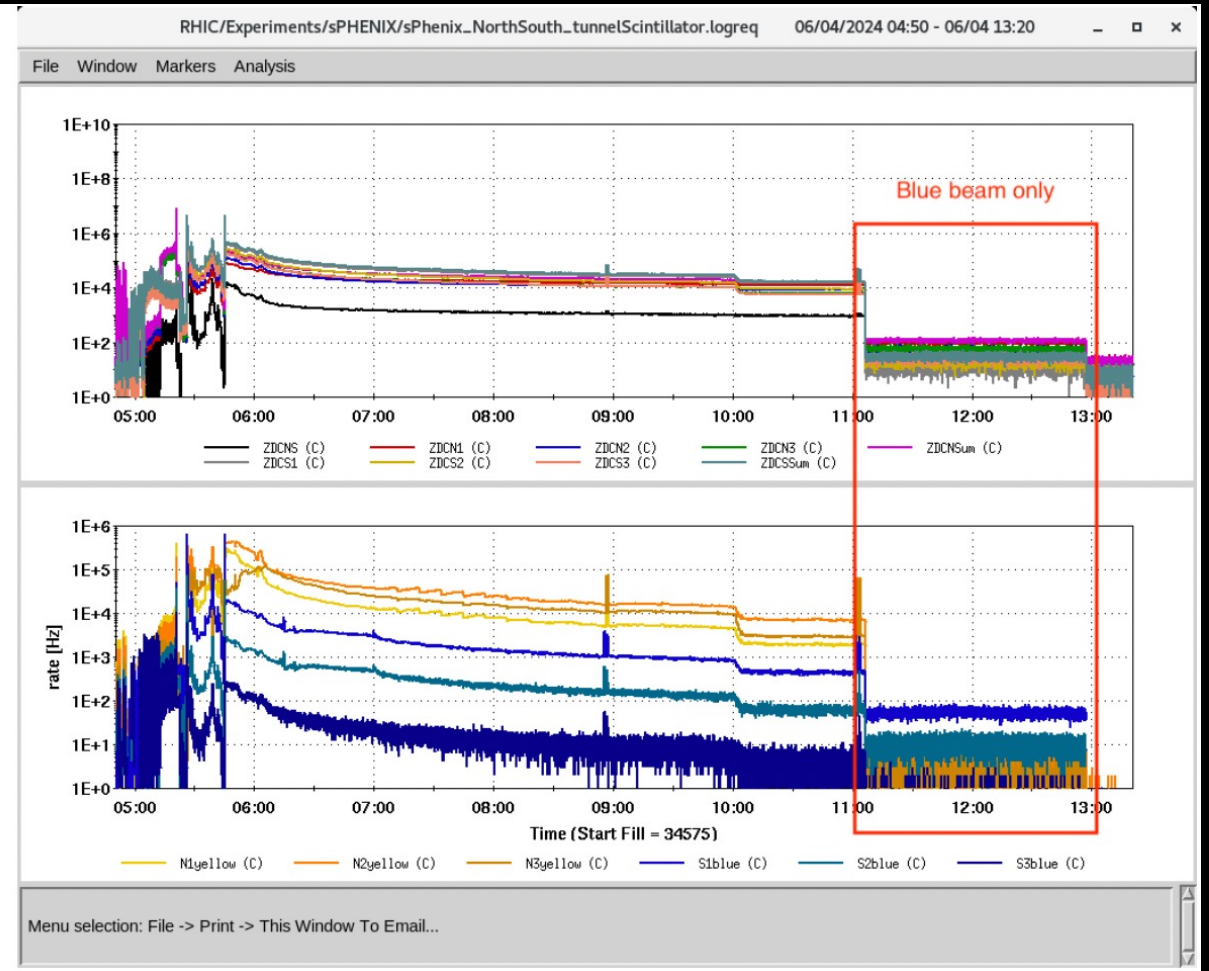
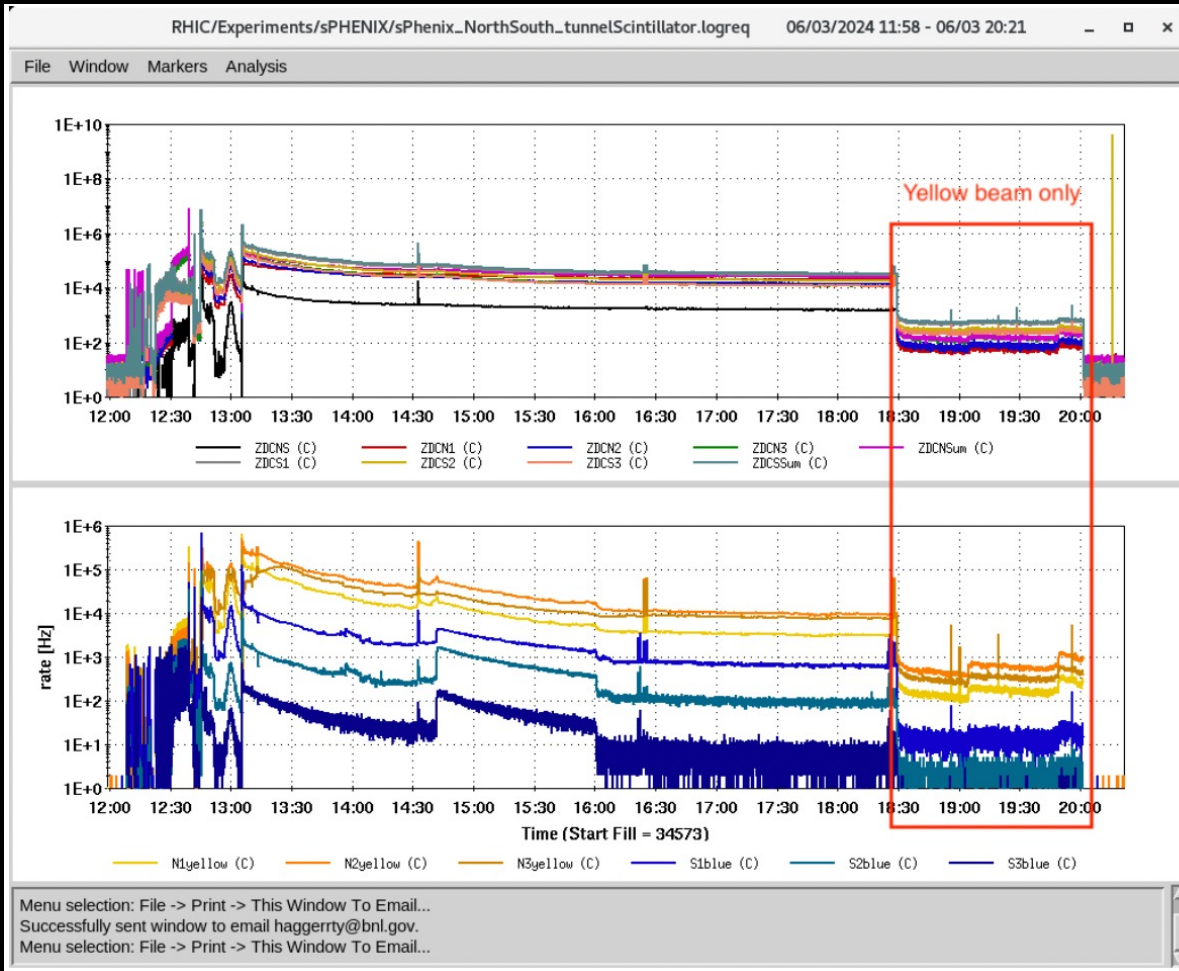
Suggestions welcome.







Special test runs with single beam





Tri-state all shook up by biggest quake in 140 years

Post photo illustration: Peter LaVigna



THE EARTH MOVED FOR US

The Big Apple was trembling Friday morning as a 4.8 magnitude earthquake struck the region. According to the US Geological Survey, some 42 million people felt the shockwaves, radiating out from north central New Jersey. It's believed to be one of the strongest East Coast quakes in a century, Gov. Hochul said.

PAGES
4-7