

# sPHENIX run 24 preparation and INTT status

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Yes, the door was closed!



# Current situation

- ✓ 02/2024: End of TPC maintenance
- ✓ Feb/22 — Mar/4: INTT ROC reinstallation on the south side
- ✓ Mar/5 — Mar/12: INTT ROC reinstallation on the north side
- ✓ Mar/13: MVTX reinstallation
- ✓ Mar/26: MBD reinstallation on the south side
- April/2024: sEPD reinstallation
- April/15: RHIC 4 K cool down started
- May/2024 —: pp collisions



## 2024 RHIC schedule update

- To make optimal use of limited cryo-weeks, we requested to move the final cool down from March 4 to **April 15**
- This continues to be the default scenario
- Last week brought some clarity on FY24 RHIC funding
  - current plan is to run for 19 + 6 weeks
  - further discussion needed to define time and duration of Au+Au running
- co-SP met with ALD yesterday
  - concern that current plan will reach p+p lumi goal only under most optimistic conditions
  - optimal use of 6wk carry-over will be determined according to sPHENIX needs

# Collaboration meeting

## Collaboration meeting: May 28-31

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- Format will differ from prior meetings, multiple goals:
  - Ideally, we will see a performance snapshot from initial running
  - Input for strategy discussions for remainder of the run
  - Approval session for SQM/AUM
  - Will set aside time (e.g. 4 x 3h) for working meetings/workfests
    - Already requested by tracking group
    - Encourage other groups to plan similar activities
  - Plenary session time will be used judiciously to avoid disruption of run-related activities



# INTT ROC reinstallation & Ladder tests

## ROC reinstallation

Rachid, Dan, and Jeff physically placed ROCs and made most of the cable connections. Rachid and Genki took responsibility for the conversion cable connections.

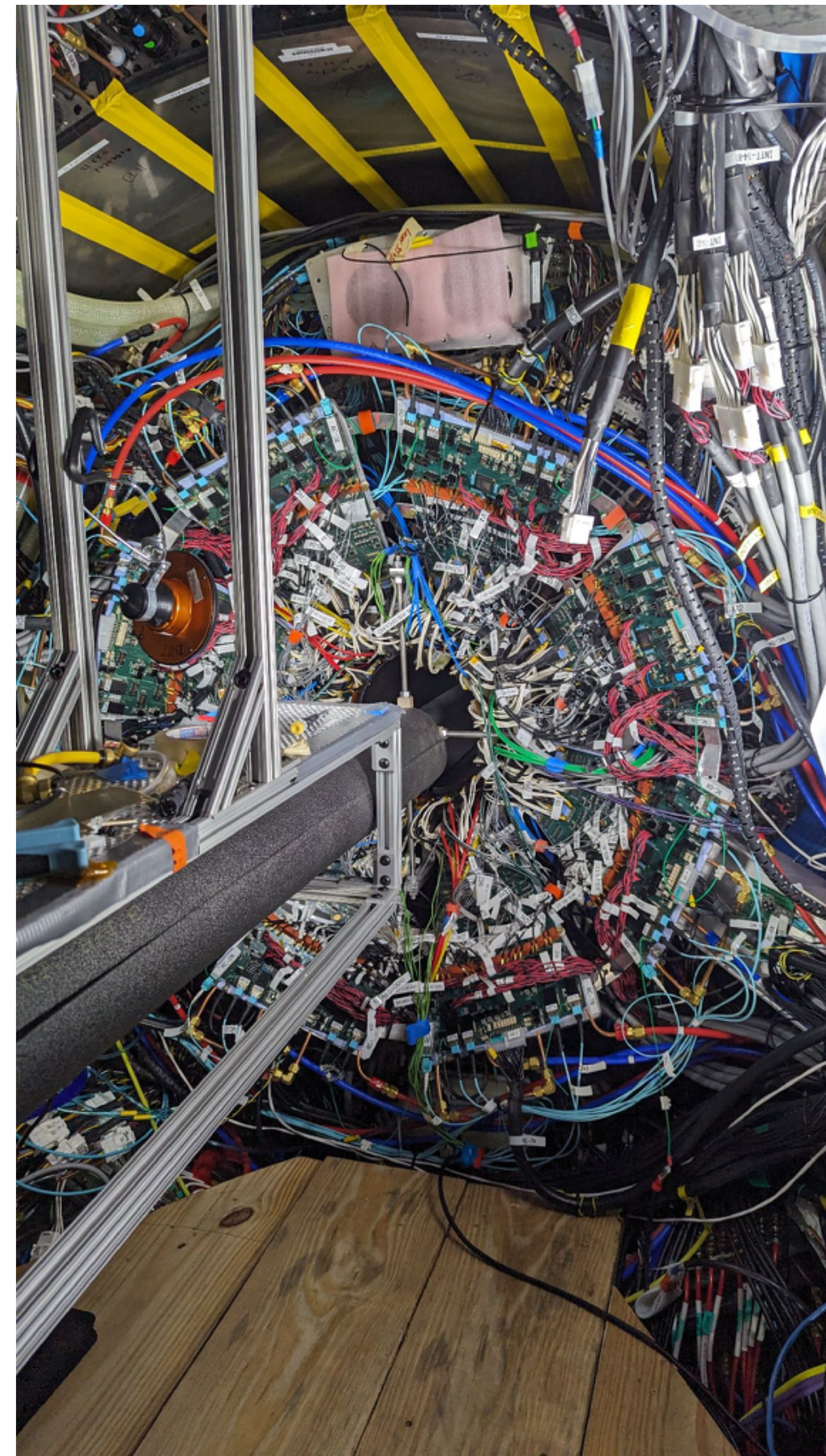
## Ladder tests

Due to the absence of Raul in the beginning, we tested the ladders by pedestal measurements with RCDAQ. So we could check

- LV and HV
- Connection of conversion cables
- Slow control commands (by changing DAC0)
- the reaction by FPHX chips
- signals from silicon strips

Tests could be conducted much smoother than last year. We finished all the tests  $\times 2$  faster than the original plan.

We also started testing ladders by calibration measurement. It's more or less working though more investigation/implementation are needed.





# Test results

## INTT Homepage

- [Commissioning plots](#)
- [Milan's plots page \(for 2023 data\)](#)
- [INTT Standing Orders](#)

### Documents

#### INTT repository

- [Channel classification](#)
- [Testbeam G4 code](#)
- [felix](#)
- [general codes](#)

## Commissioning plots in 2024

Reload

[Run Log \(Google Spreadsheet\)](#)

[Process request form](#)

### List of runs

#### calib

- [03012035](#) (intt1)
- [03012059](#) (intt1)
- [03012104](#) (intt1)
- [03031049](#) (intt0)
- [03031054](#) (intt0)
- [03032024](#) (intt0)
- [03032052](#) (intt1)
- [03032058](#) (intt1)
- [03032104](#) (intt1)

#### pedestal

- [00030287](#) (intt0)
- [00030316](#) (intt0)
- [00030317](#) (intt0)
- [00030318](#) (intt0)
- [00030369](#) (intt0)
- [00030373](#) (intt0)
- [00030375](#) (intt0)
- [00030378](#) (intt0)
- [00030379](#) (intt0)

#### cosmics

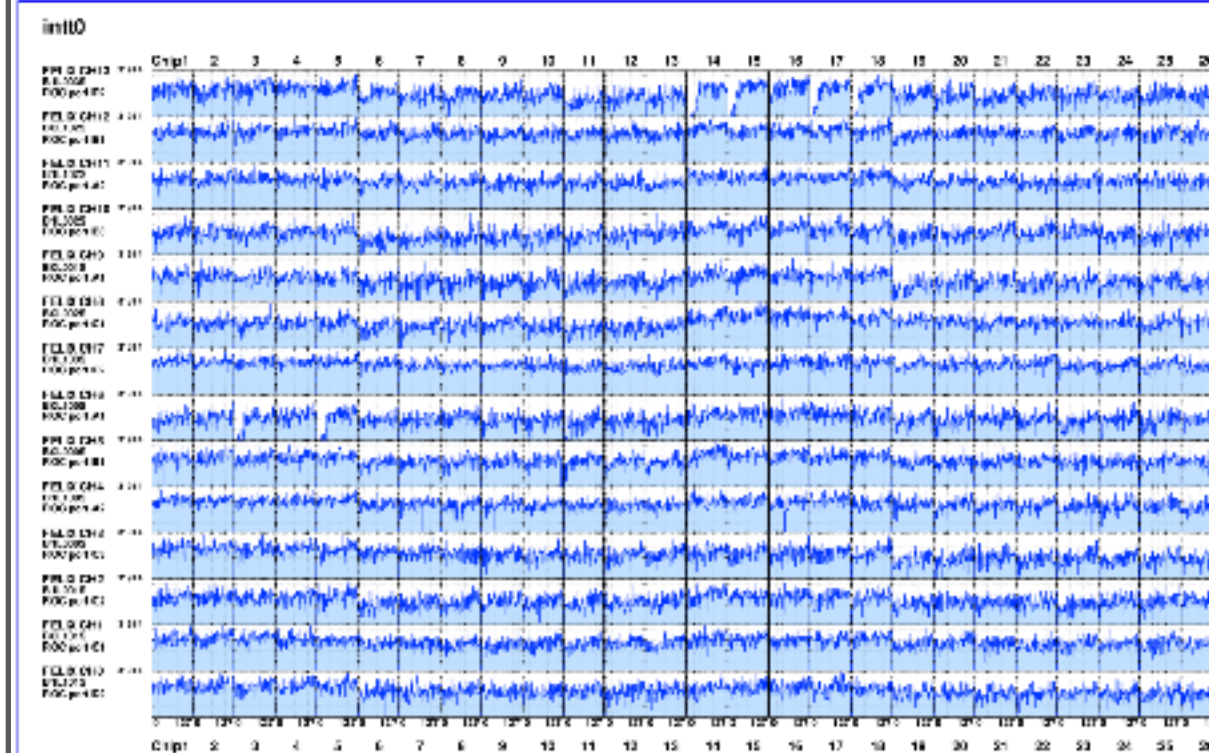
#### beam

#### junk

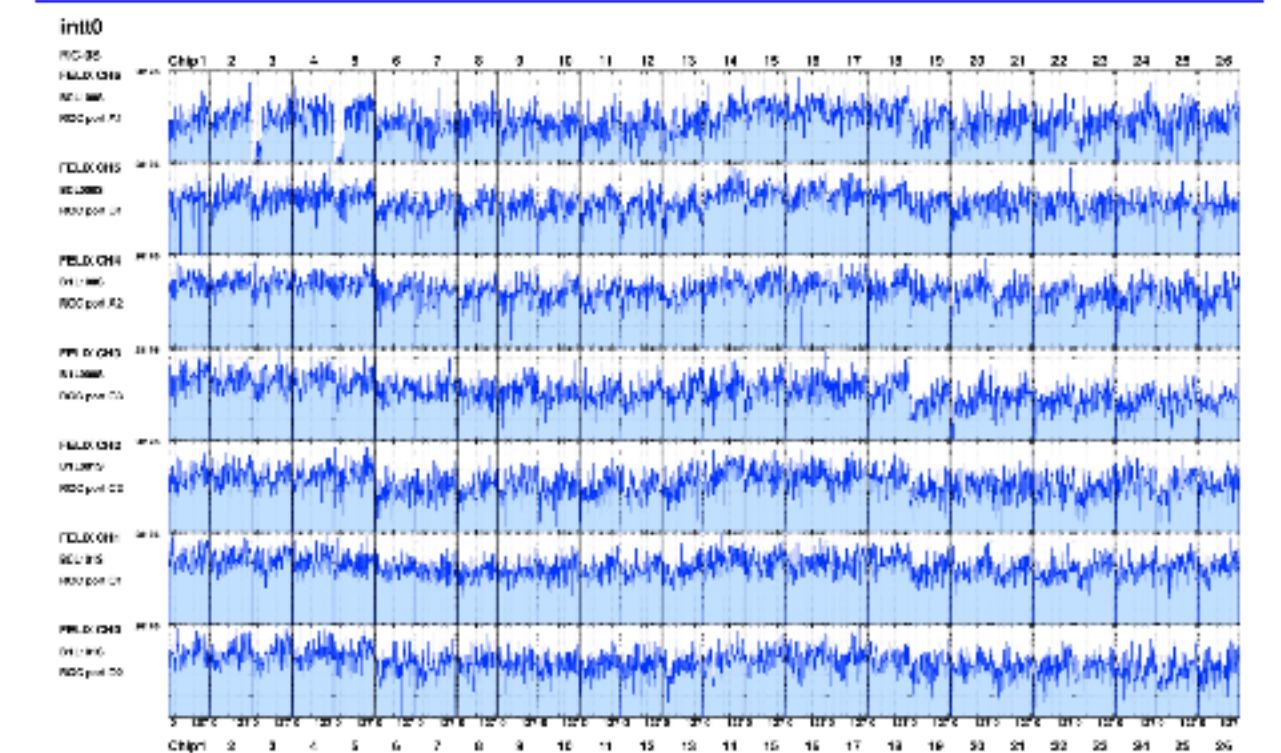
- [00029642](#) (intt0, 1)
- [00029643](#) (intt0, 1)
- [00029644](#) (intt0, 1)
- [00029667](#) (intt0, 1, 2, 3, 4, 5, 6, 7)
- [00029674](#) (intt0, 1, 2, 3, 4, 5, 6, 7)
- [00029678](#)

## Run 31749

### intt0



pedestal  
Hist distributions  
chunk 0000



pedestal  
Hist distributions  
chunk 0000

sPHENIX members can access the test results:

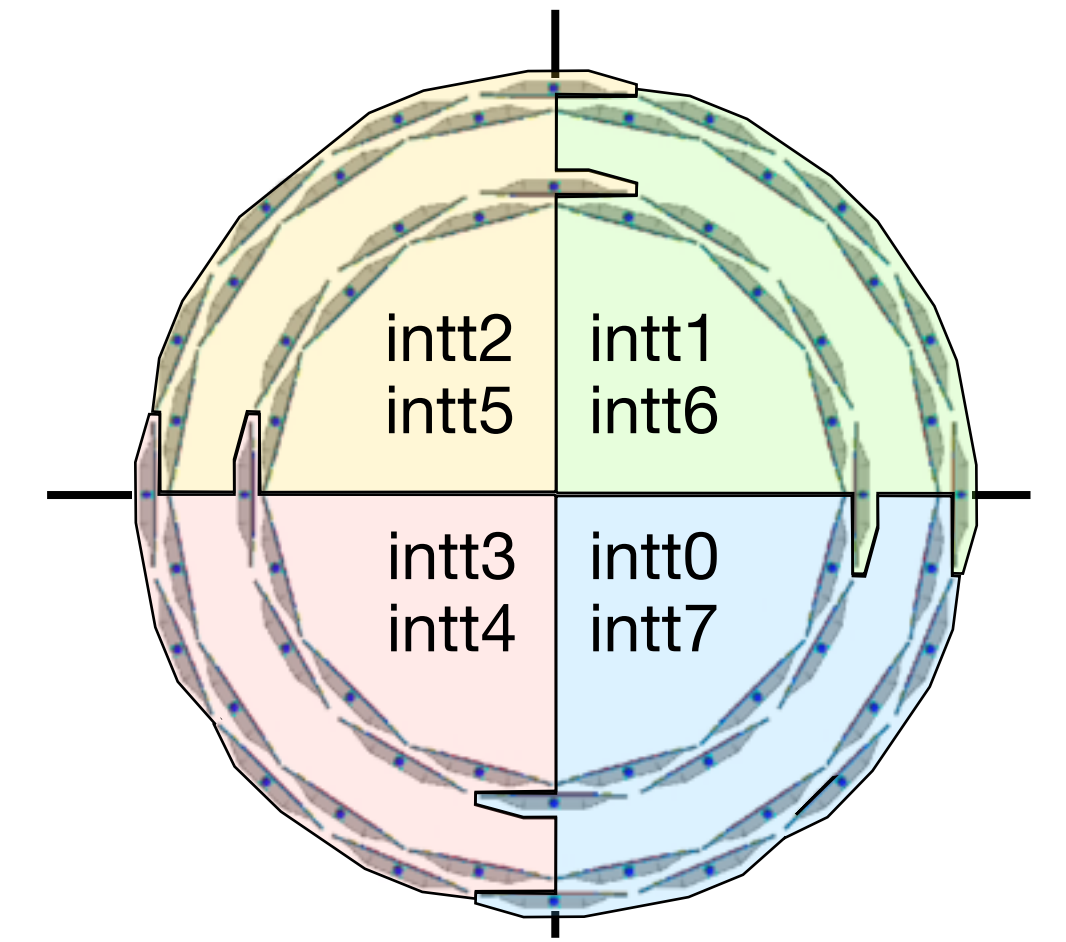
[https://sphenix-intra.sdcc.bnl.gov/WWW/subsystem/intt/commissioning\\_plots/2024](https://sphenix-intra.sdcc.bnl.gov/WWW/subsystem/intt/commissioning_plots/2024)

(SSH tunnel to 1008 servers needed)



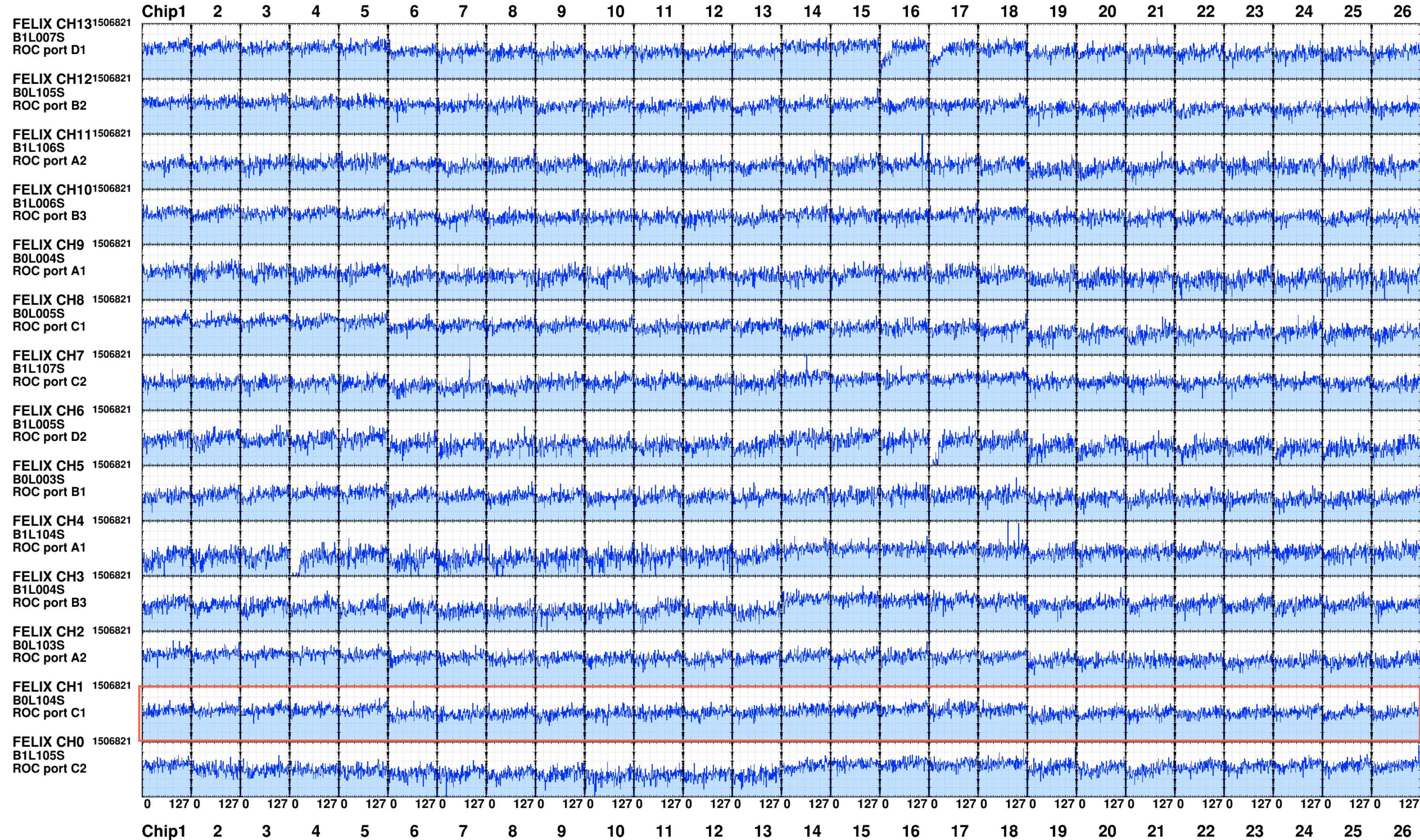
# Test results: Pedestal measurement

Channel distributions of 14 half-ladders connected to intt1 (South)

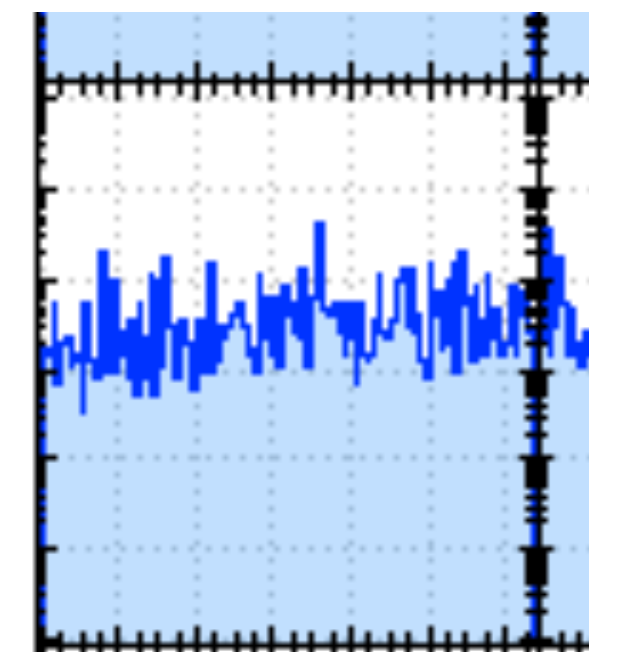


intt1

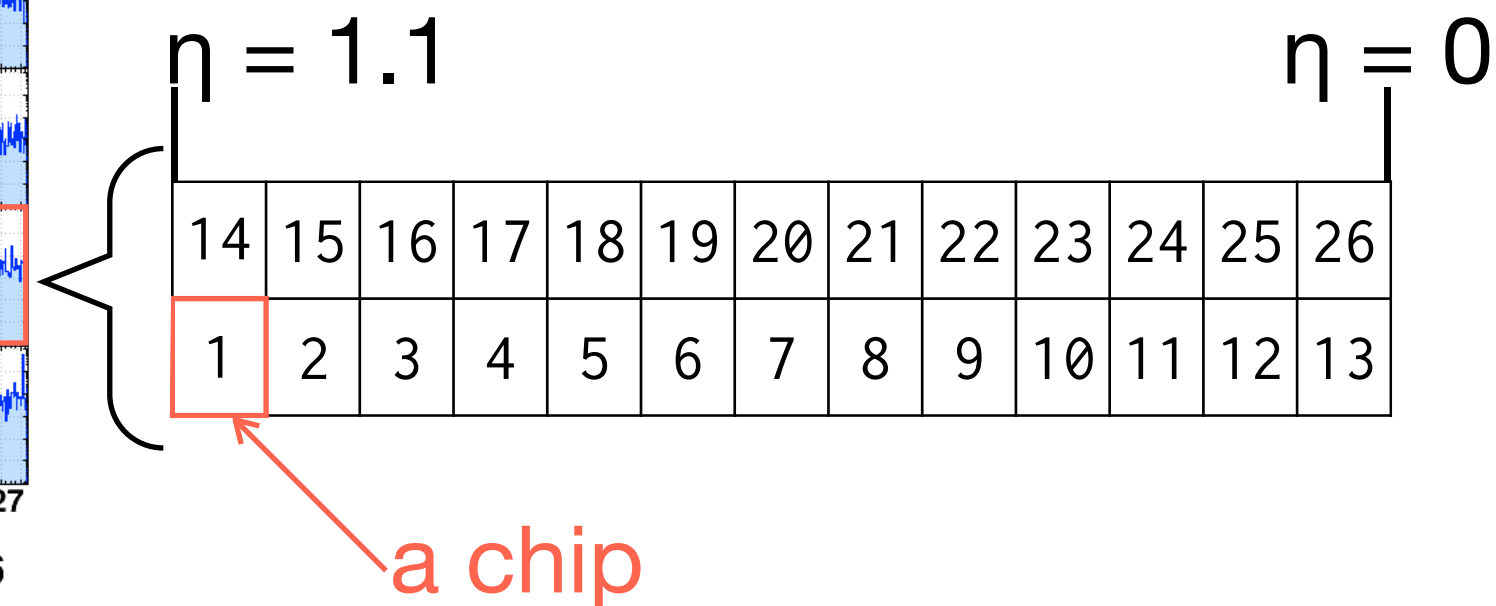
Run 34597



1506821



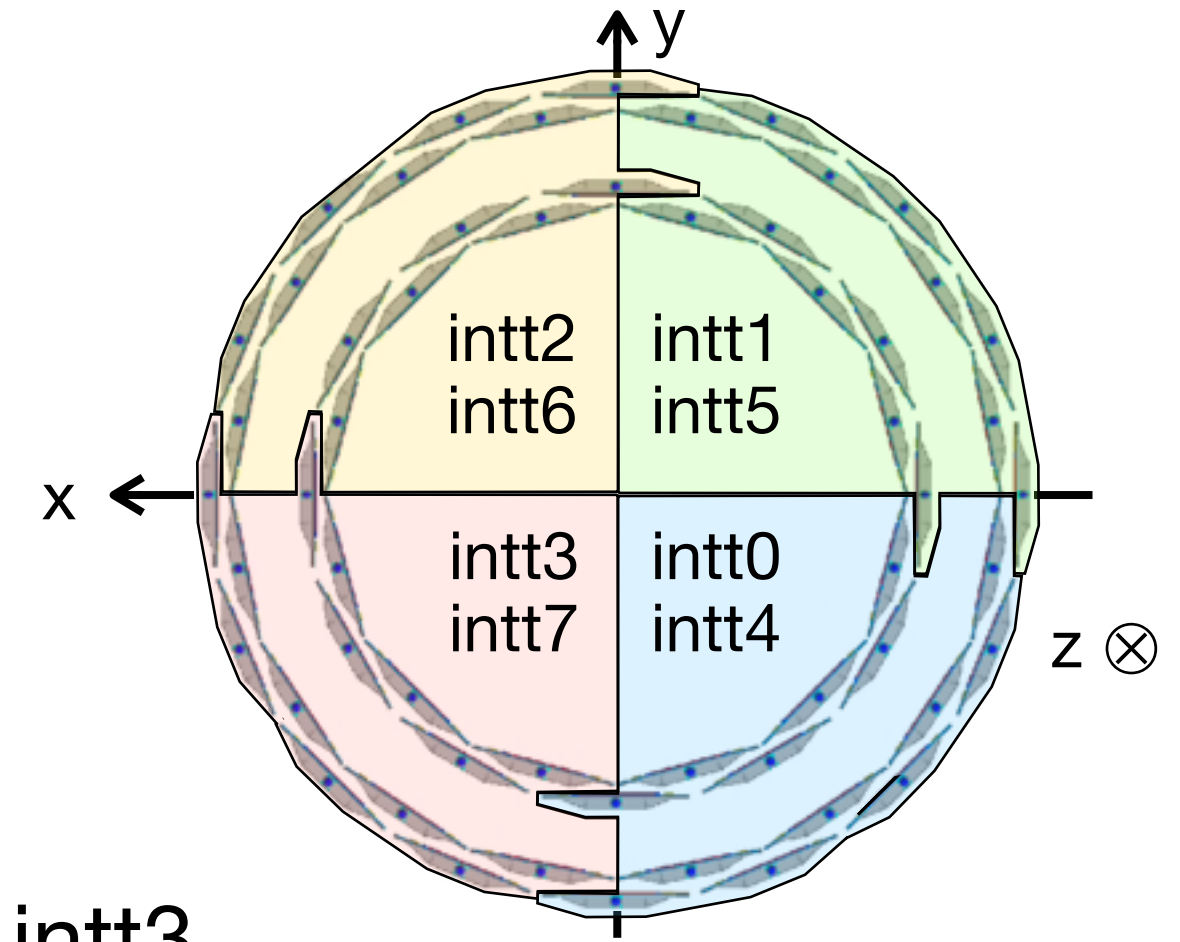
1506821





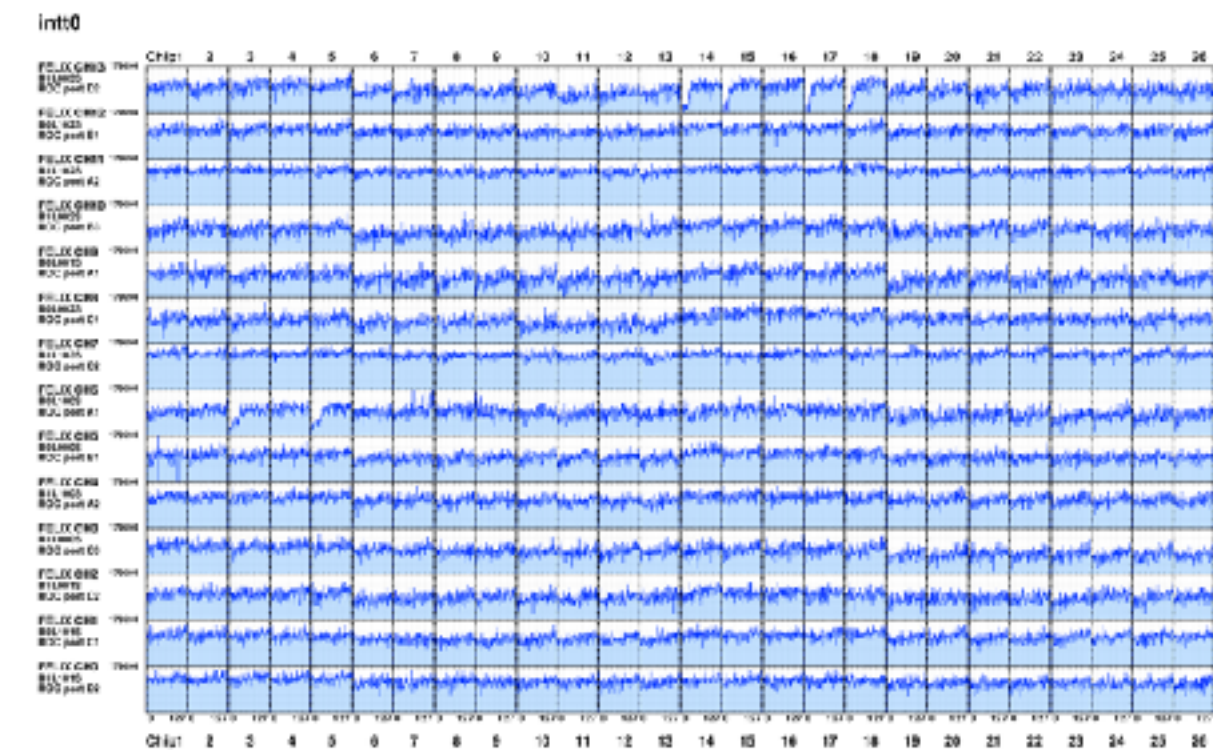
# Test results: Pedestal measurement

Run 34597

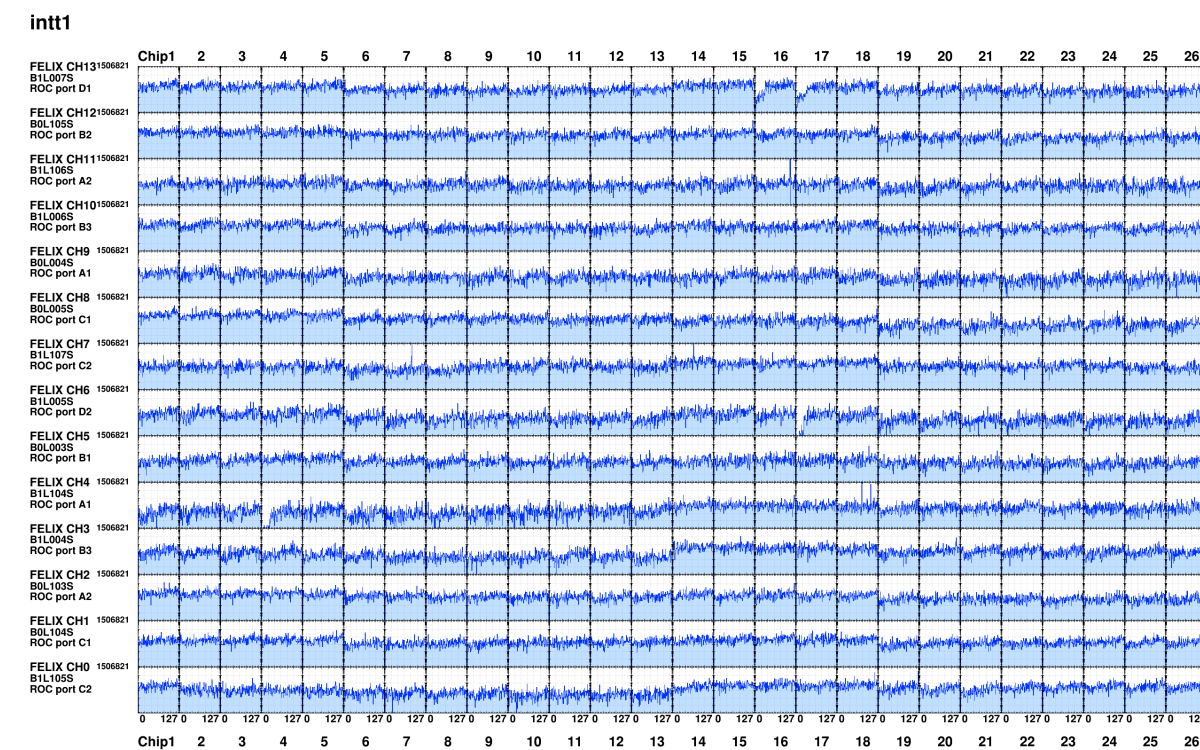


## South side

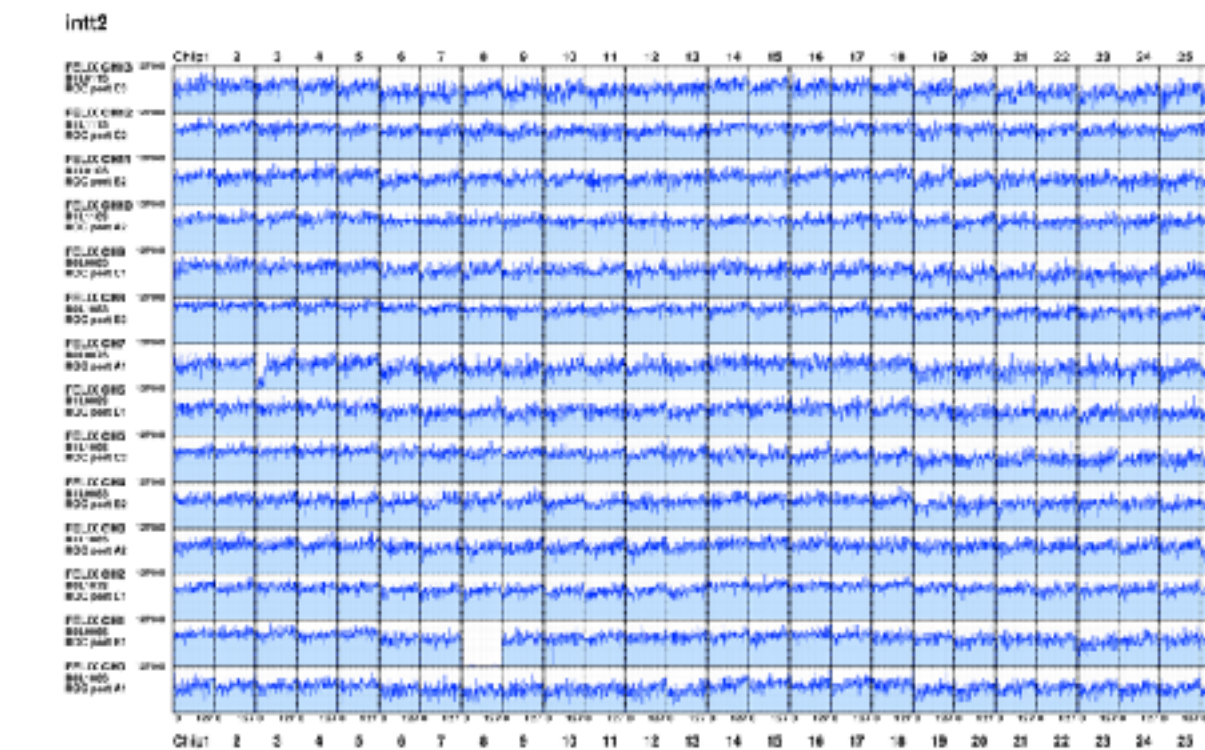
intt0



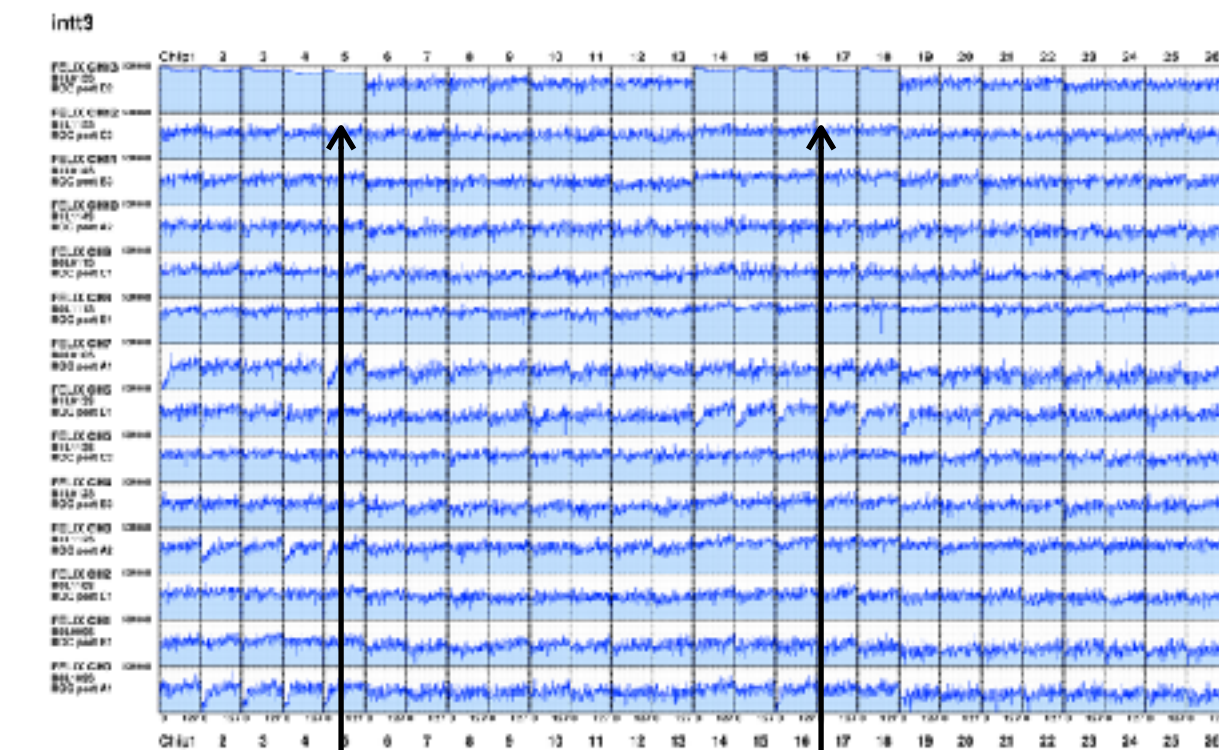
intt1



intt2

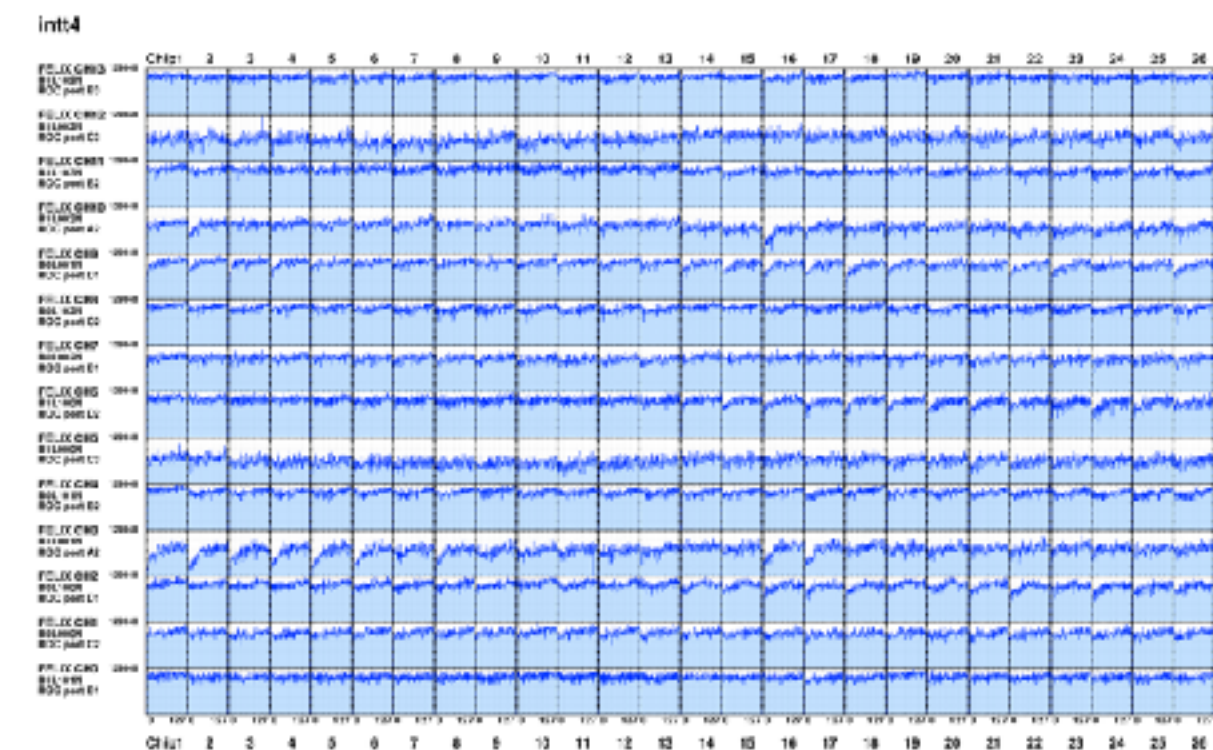


intt3

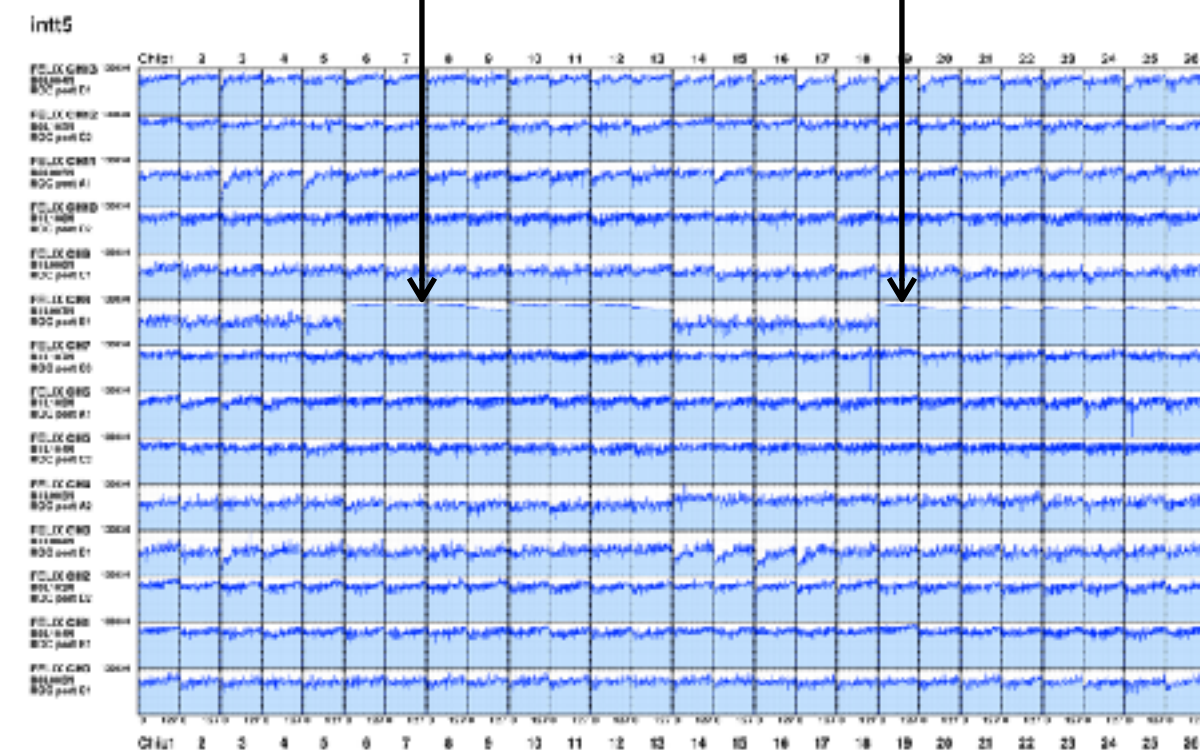


## North side

intt4

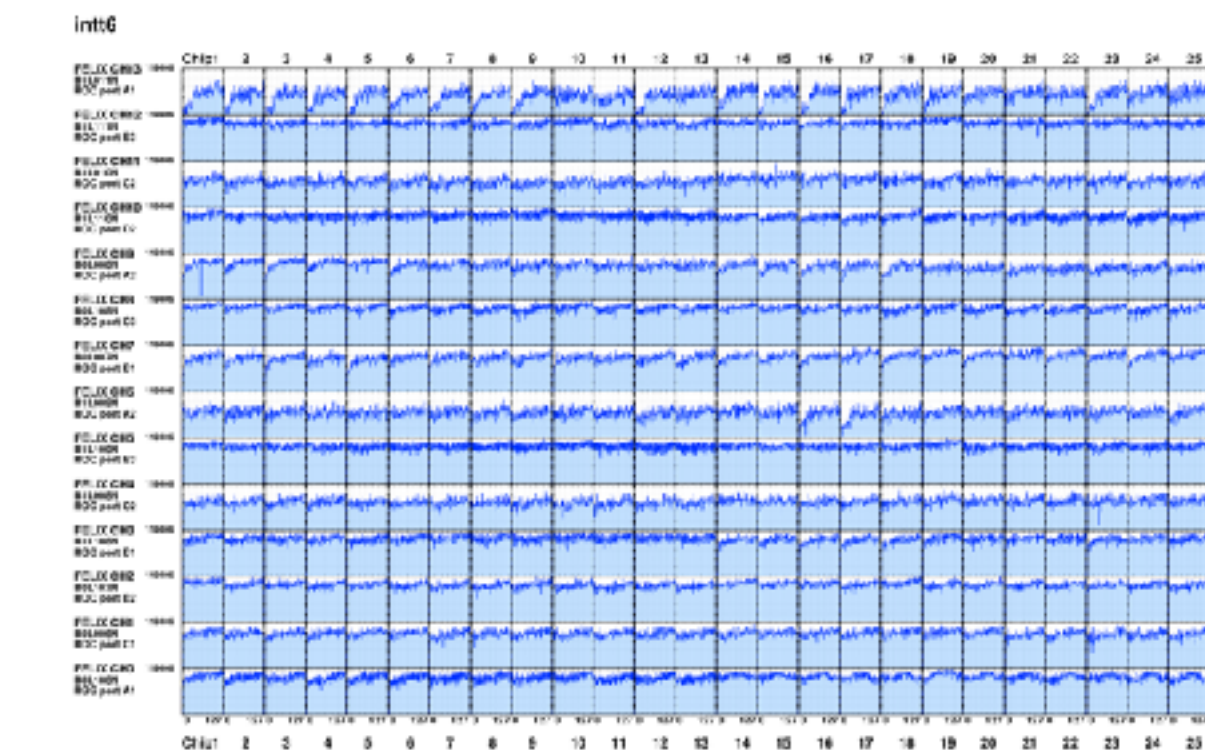


intt5

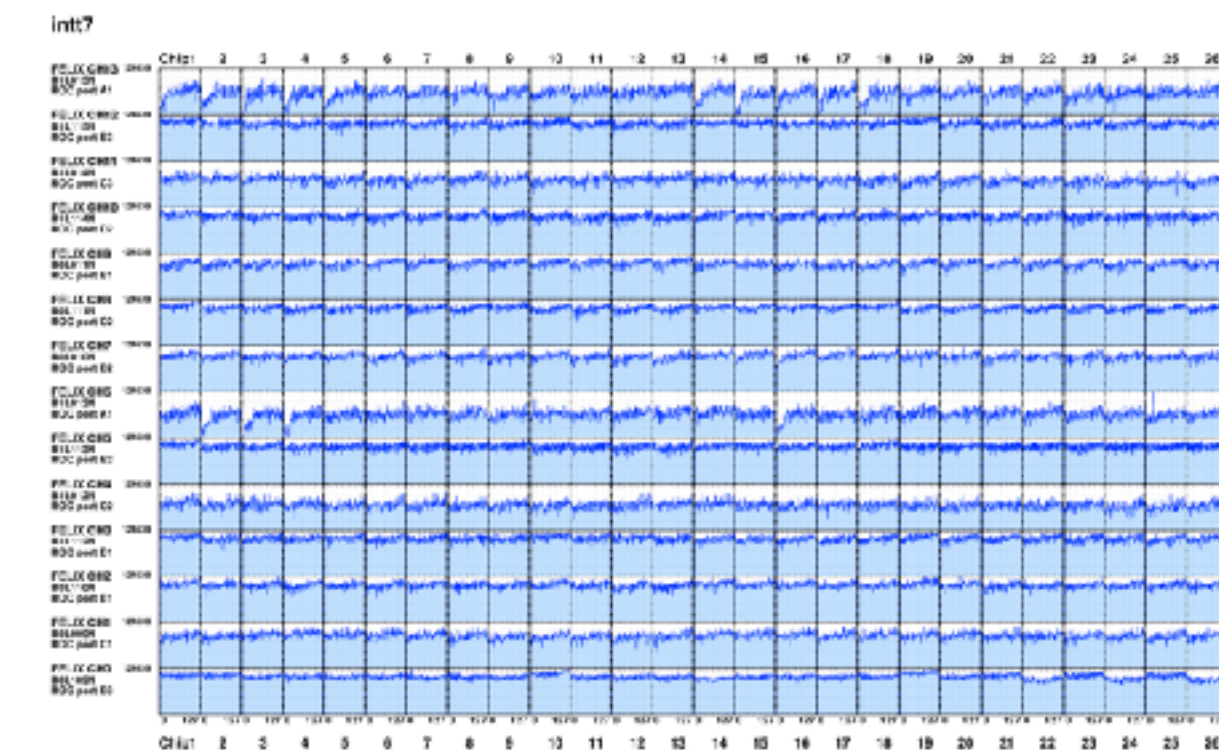


no bias (same as 2023)

intt6



intt7



no bias (same as 2023)

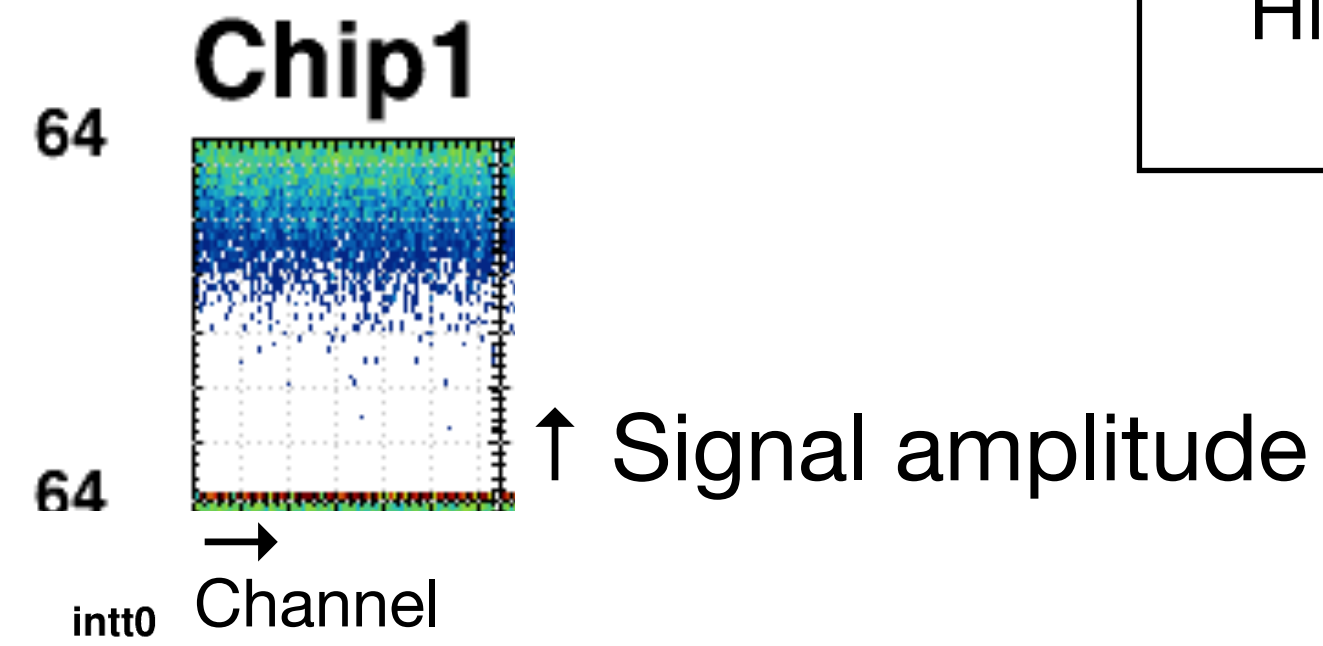
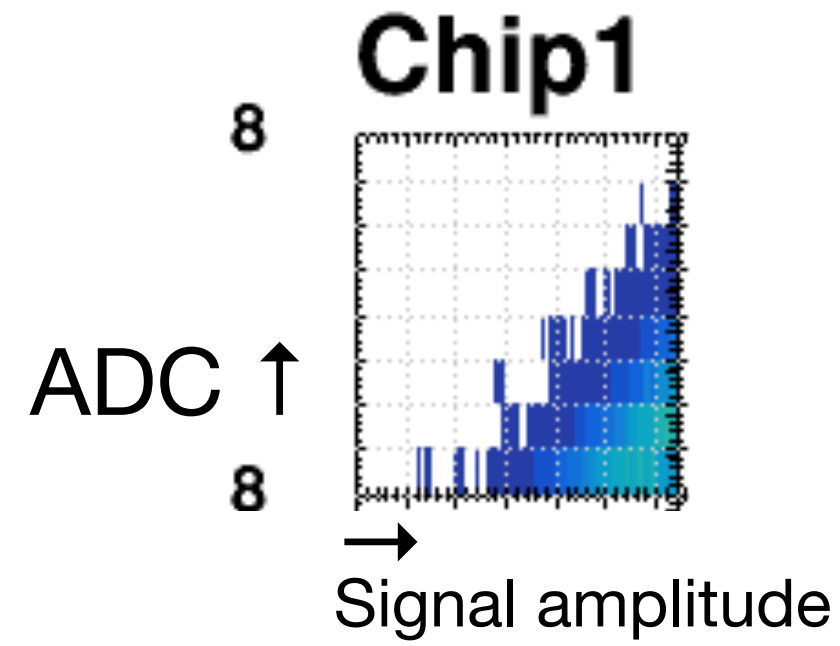


# Test results: Calibration measurement

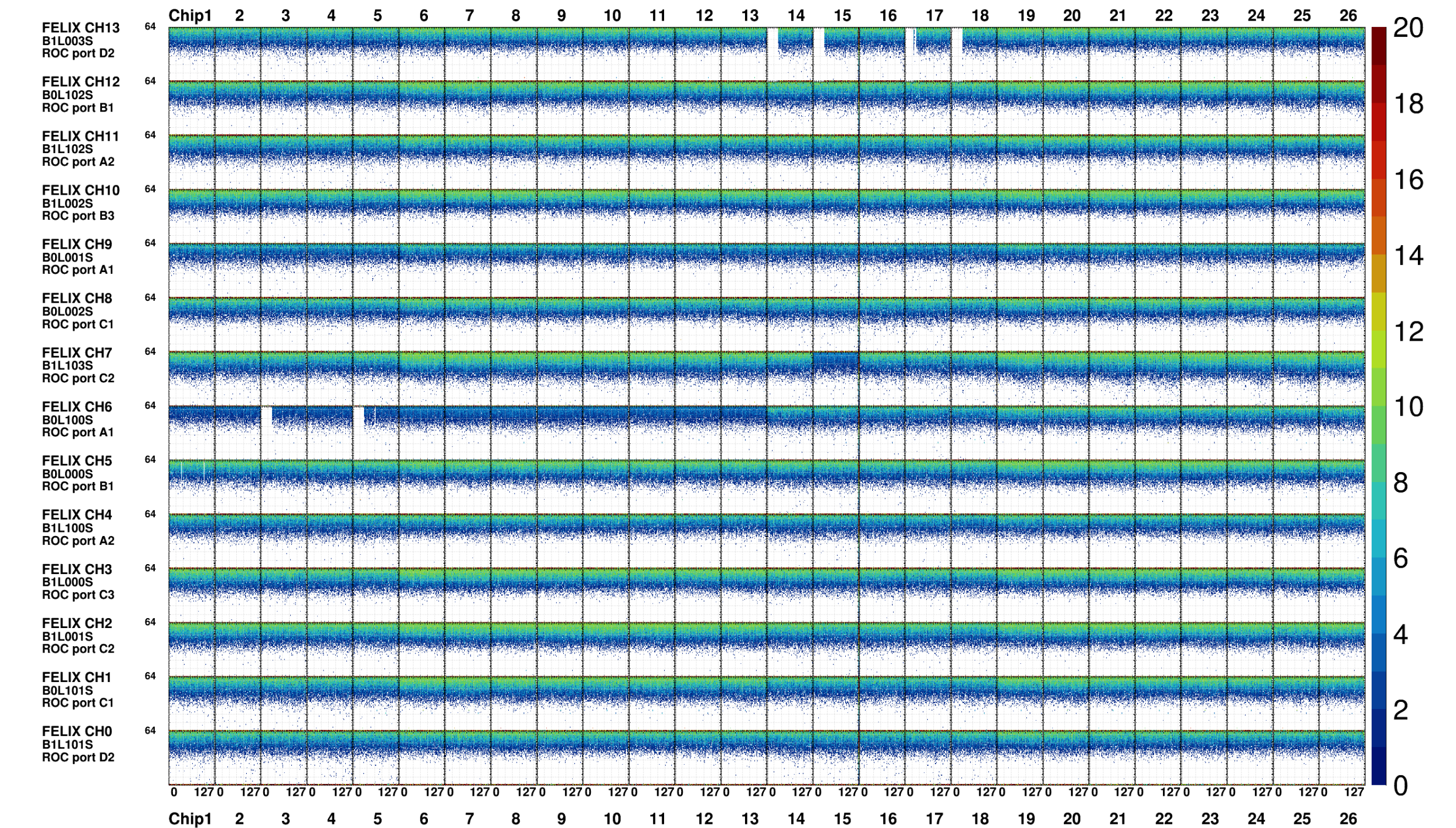
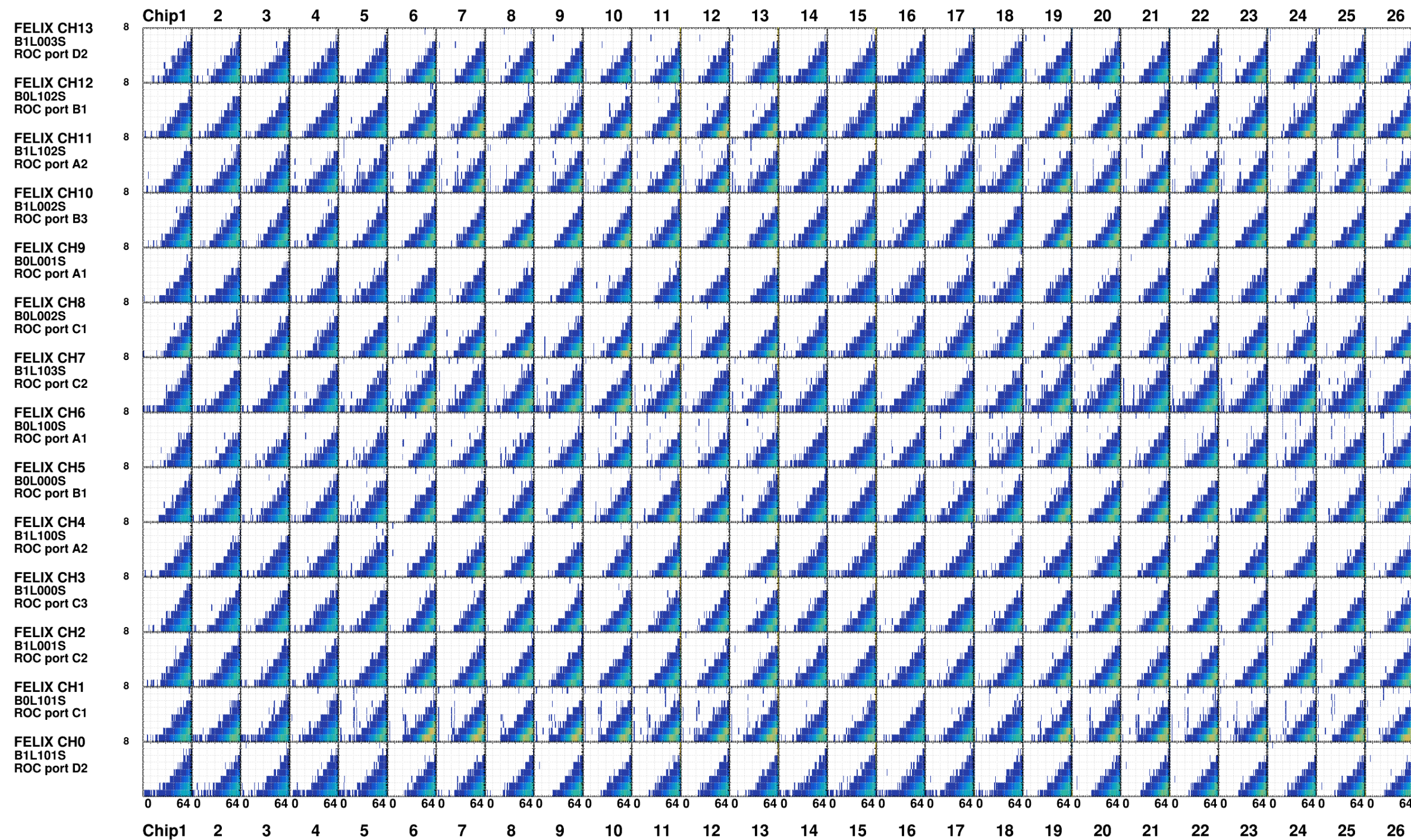
Run 3111831  
 Test run  
 No bias  
 Higher DAC setting than usual

## South side

intt0



intt0





# JPS talks and the plot approval presentations

We followed the sPHENIX procedure to show our results at the JPS meeting: any plots to be shown in public must be *preliminary*.

Presentations for plot approval were given at the last sPHENIX general meeting.

5 INTT talks were given in the JPS meeting (+1 Jet +1 Cold-QCD talks).

12:00	→ 12:20	<b>Collaboration news</b>	Speakers: David Morrison (BNL), Gunther Roland (MIT)	🕒 20m
			GM_20240315.pdf	
12:20	→ 12:40	<b>Detector status, schedule and commissioning plan</b>	Speakers: James Nagle (University of Colorado), John Haggerty (Brookhaven National Laboratory)	🕒 20m
			haggerty_fortnightly...	
12:40	→ 12:50	<b>Speaker's bureau update</b>	Speakers: Marzia Rosati (Iowa State University), Marzia Rosati (Iowa State University (mrosati@iastate.edu))	🕒 10m
			GenMeet-SB-2024-0...	
12:50	→ 13:20	<b>Update on Fast-ML MVTX project and application in Run 2024</b>	Speaker: Ming Liu (Los Alamos)	🕒 30m
			FastML-for-sPHENIX...	
13:20	→ 13:50	<b>INTT performance plot approval</b>	Speakers: Mai Kano, Manami Fujiwara, Misaki Hata, Yuka Sugiyama (Nara Women's University), maya shimomura (nara women's university)	🕒 30m
			20240315_INTT_JP... individual slides	
13:50	→ 14:10	<b>Computing update</b>	Speaker: Chris Pinkenburg (BNL)	🕒 20m
			general_meeting-20... general_meeting-20...	

Presentations

1. Development of algorithm to detect bad channels of INTT (Yuka Sugiyama)
2. Data readout of the INTT in the 2023 commissioning data (Mai Kano)
3. Qvector Analysis (Manami Fujiwara)
4. Study of INTT cluster distribution (Misaki Hata)

They have been working on INTT detector R&D and commissioning for 2-3 years. They plan to show their work for detector QA at JPS meeting on March 19<sup>th</sup> and 21<sup>st</sup>.

講演番号	登録番号	タイトル	著者	所属	領域
21aV2-10	2083	RHIC-sPHENIX実験における中間飛跡検出器INTTの動作検証	杉山由佳, 秋葉康之 <sup>A</sup> , 池本真尋, 櫻園昭智 <sup>B</sup> , 加藤智也 <sup>C</sup> , 加納麻衣, 甘林, 菊池陸大 <sup>D</sup> , 近藤崇 <sup>E</sup> , 穴倉遼太 <sup>C</sup> , 下村真弥, 辻端日菜子, 寺坂優里, 中川格 <sup>A</sup> , 糠塚元気 <sup>A</sup> , 長谷川勝一 <sup>E</sup> , 波多美咲, 蜂谷崇 <sup>A</sup> , 藤木一真 <sup>C</sup> , 藤原愛実, 森本菜央, 渡部舞	奈良女子大, 理研 <sup>A</sup> , 温研BNLセ <sup>B</sup> , 立教大 <sup>C</sup> , 都立産技研 <sup>D</sup> , JAEA <sup>E</sup>	実験核物理領域
21aV2-11	1994	RHIC-sPHENIX実験における中間飛跡検出器INTTのデータ読出し	加納麻衣, 秋葉康之 <sup>A</sup> , 池本真尋, 櫻園昭智 <sup>B</sup> , 加藤智也 <sup>C</sup> , 甘林, 菊池陸大 <sup>C</sup> , 近藤崇 <sup>D</sup> , 穴倉遼太 <sup>C</sup> , 下村真弥, 杉山由佳, 辻端日菜子, 寺坂優里, 中川格 <sup>A</sup> , 糠塚元気 <sup>A</sup> , 長谷川勝一 <sup>E</sup> , 波多美咲, 蜂谷崇 <sup>A</sup> , 藤木一真 <sup>C</sup> , 藤原愛実, 森本菜央, 渡部舞	奈良女子大, 理研 <sup>A</sup> , 温研BNLセ <sup>B</sup> , 立教大 <sup>C</sup> , 都立産技研 <sup>D</sup> , JAEA <sup>E</sup>	実験核物理領域
21aV2-12	1973	RHIC-sPHENIX実験における中間飛跡検出器INTTを用いた飛跡再構成	辻端日菜子 <sup>A</sup> , 秋葉康之 <sup>B</sup> , 池本真尋 <sup>A</sup> , 櫻園昭智 <sup>C</sup> , 加藤智也 <sup>D</sup> , 加納麻衣 <sup>A</sup> , 甘林 <sup>A</sup> , 菊池陸大 <sup>D</sup> , 近藤崇 <sup>E</sup> , 穴倉遼太 <sup>D</sup> , 下村真弥 <sup>A</sup> , 杉山由佳 <sup>A</sup> , 寺坂優里 <sup>A</sup> , 中川格 <sup>B</sup> , 糠塚元気 <sup>B</sup> , 長谷川勝一 <sup>F</sup> , 波多美咲 <sup>A</sup> , 蜂谷崇 <sup>A,B</sup> , 藤木一真 <sup>D</sup> , 藤原愛実 <sup>A</sup> , 森本菜央 <sup>A</sup> , 渡部舞 <sup>A</sup>	奈良女子大 <sup>A</sup> , 理研 <sup>B</sup> , 温研BNLセ <sup>C</sup> , 立教大 <sup>D</sup> , 都立産技研 <sup>E</sup> , JAEA <sup>F</sup>	実験核物理領域
19pU1-11	1870	RHIC-sPHENIX実験におけるシリコン飛跡検出器を用いた粒子多重度の測定	波多美咲 <sup>B</sup> , 秋葉康之 <sup>A</sup> , 池本真尋 <sup>B</sup> , 櫻園昭智 <sup>C</sup> , 加藤智也 <sup>D</sup> , 加納麻衣 <sup>B</sup> , 甘林 <sup>B</sup> , 菊池陸大 <sup>D</sup> , 近藤崇 <sup>E</sup> , 穴倉遼太 <sup>L</sup> , 下村真弥 <sup>B</sup> , 杉山由佳 <sup>B</sup> , 辻端日菜子 <sup>B</sup> , 寺坂優里 <sup>B</sup> , 中川格 <sup>A</sup> , 糠塚元気 <sup>A</sup> , 長谷川勝一 <sup>F</sup> , 蜂谷崇 <sup>B,A</sup> , 藤木一真 <sup>D</sup> , 藤原愛実 <sup>B</sup> , 森本菜央 <sup>B</sup> , 渡部舞 <sup>B</sup>	理研 <sup>A</sup> , 奈良女子大 <sup>B</sup> , 温研BNLセ <sup>C</sup> , 立教大 <sup>D</sup> , 都立産技研 <sup>E</sup> , JAEA <sup>F</sup>	理論核物理領域
19pU1-12	1890	RHIC-sPHENIX 実験における反応平面の測定	藤原愛実 <sup>B</sup> , 秋葉康之 <sup>A</sup> , 池本真尋 <sup>B</sup> , 櫻園昭智 <sup>C</sup> , 加藤智也 <sup>D</sup> , 加納麻衣 <sup>B</sup> , 甘林 <sup>B</sup> , 菊池陸大 <sup>D</sup> , 近藤崇 <sup>E</sup> , 穴倉遼太 <sup>D</sup> , 下村真弥 <sup>B</sup> , 杉山由佳 <sup>B</sup> , 辻端日菜子 <sup>B</sup> , 寺坂優里 <sup>B</sup> , 中川格 <sup>A</sup> , 糠塚元気 <sup>A</sup> , 長谷川勝一 <sup>F</sup> , 波多美咲 <sup>B</sup> , 蜂谷崇 <sup>B,A</sup> , 藤木一真 <sup>D</sup> , 森本菜央 <sup>B</sup> , 渡部舞 <sup>B</sup>	理研 <sup>A</sup> , 奈良女子大 <sup>B</sup> , 温研BNLセ <sup>C</sup> , 立教大 <sup>D</sup> , 都立産技研 <sup>E</sup> , JAEA <sup>F</sup>	理論核物理領域
19pU1-13	1905	RHIC-sPHENIX実験におけるジェット検出手法の開発と評価	渡部舞 for the sPHENIX Collaboration	奈良女大	理論核物理領域
21pU1-9	839	sPHENIX Cold-QCD プログラム	糠塚元気, 他 sPHENIX Collaboration	理研	理論核物理領域

