



# STAR and PHENIX Production

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Amol Jaikar

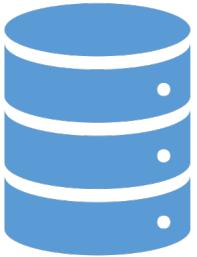
# Index

## STAR

- Production
- BirdView  
(Monitoring framework)

## PHENIX

- Production
- OSG Exploration



## Production

RAW dataset(DAQ) to MuDst conversion  
MuDst to PicoDst conversion



## BirdView

Monitoring system  
Notification system  
Workflow management

# Production



RAW dataset to MuDst  
conversion



MuDst to PicoDst conversion



Nightly jobs

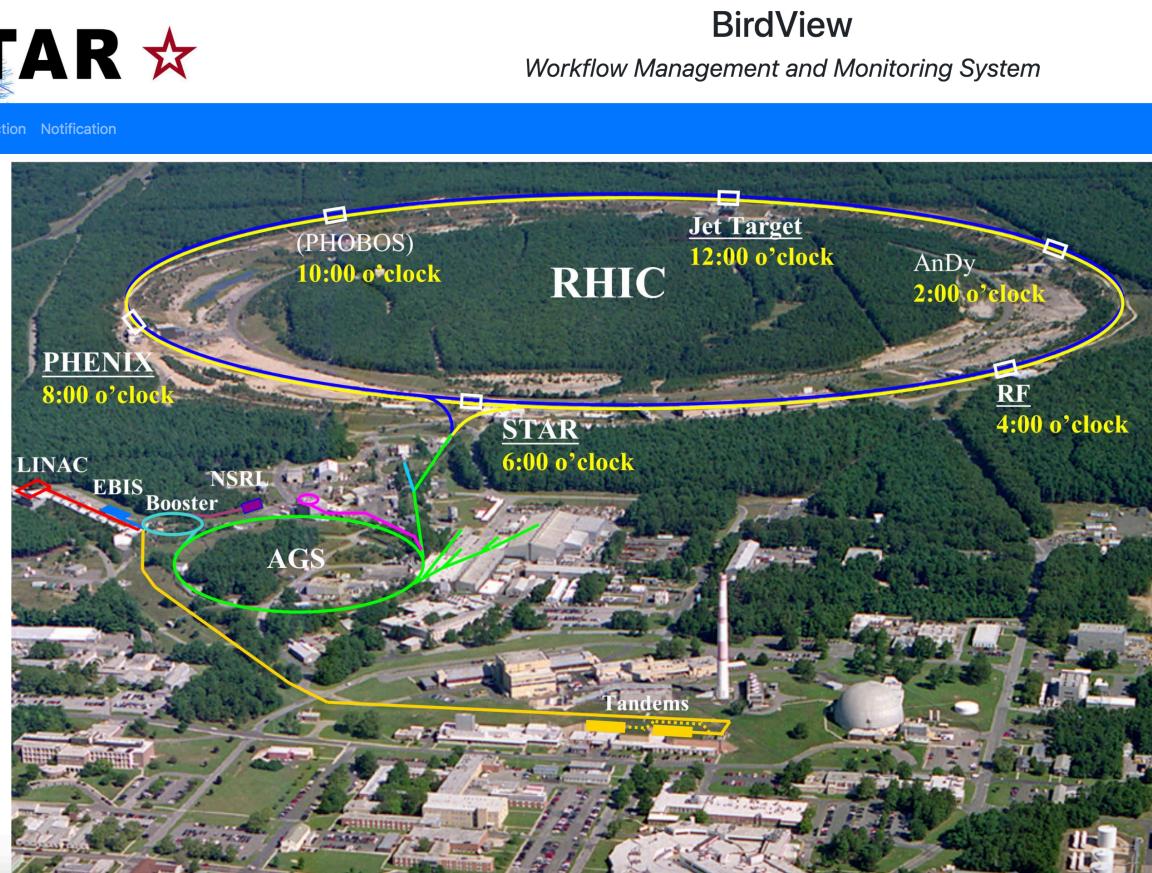
# RAW TO MUDST

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- Current Framework
  - Consist of 4 steps
    - Database insertion
    - Extract runnumber information
    - File creation
    - Submission
- New Framework
  - Consist of 2 steps
    - Files creation
    - Submission

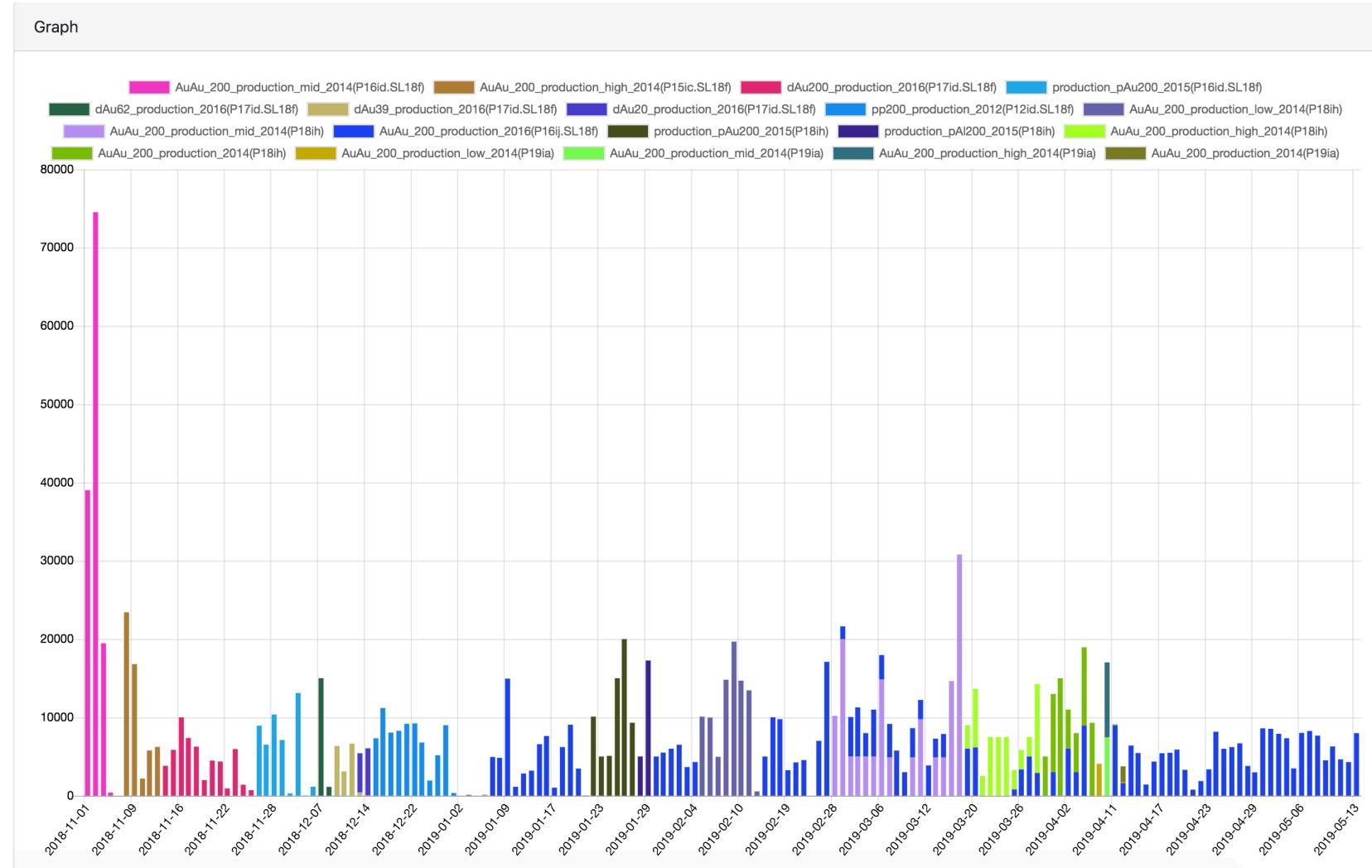
Log extraction framework		
Parameter	Old	New
Execution Time	12 ~ 19 min	2.37 ~ 3.5 min
Parse files	8 ~ 32	148 ~ 162
Code length	2140	721
Language	Perl	Python

# BirdView



- **Monitoring System**
  - Production job's monitoring system
  - Nightly job's performance monitoring
  - Fault identification system
- **Notification System**
  - Notification of an event
- **Workload management**
  - Add or remove Nightly jobs
  - Launch test and production jobs

# MuDst to PicoDst Conversion



# Current Production

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**BirdView**  
*Workflow Management and Monitoring System*

[BirdView](#) [Nightly Test](#) [Production](#) [Notification](#)

[Current Production](#) [PicoDst Conversion](#) [Disk status](#) [Chain Details](#)

Current Production Status			
Trigger set name	Production tag	Status	Number of Jobs
27GeV_production_2018	P19ib_calib	DONE	2
production_14p5GeV_2019	dev	DONE	3
production_19GeV_2019	dev	DONE	46
27GeV_production_2018	P19ib_calib	RUNNING	382
production_14p5GeV_2019	dev	RUNNING	5
production_19GeV_2019	dev	RUNNING	127
production_19GeV_2019	dev	STAGING	19
production_19GeV_2019	dev	SUBMITTED	3

# Nightly Job Monitoring

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BirdView   Nightly Test   Production   Notification

Nightly Tests   Add New Test   Precision   Precision Modification   Week Status   Dataset Change Identification   Dataset Compare   Dataset w.r.t. Library

Past Week Details

DatasetID   Start Time   End Time   Select Parameter   Choose the Parameter

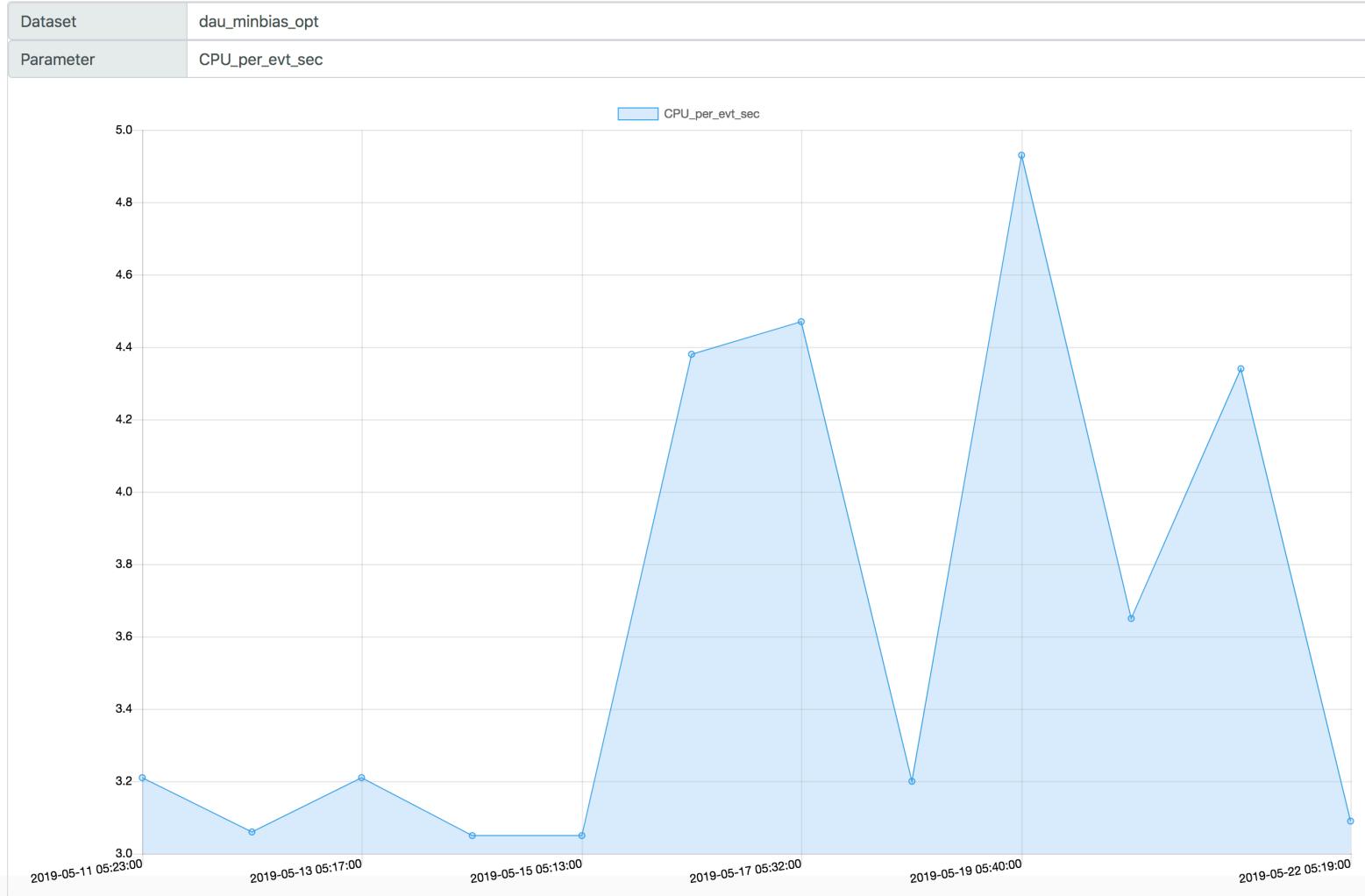
Graph

DatasetID	Date 1	Date 2	NoEventDone (1.0%)	memUsageF (5.0%)	memUsageL (5.0%)	CPU_per_evt_sec (50.0%)	RealTime_per_evt (50.0%)	percent_of_usable_evt (1.0%)	avg_no_tracks (1.0%)
12	2019-5-18	2019-5-19	0.0	0.04	0.07	54.06	53.57	0.0	0.0
13	2019-5-18	2019-5-19	0.0	0.06	0.04	87.59	82.8	0.0	0.0
34	2019-5-18	2019-5-19	0.0	0.55	0.08	22.66	22.62	0.0	1.06
34	2019-5-19	2019-5-20	0.0	0.32	0.23	42.68	42.85	0.0	1.08

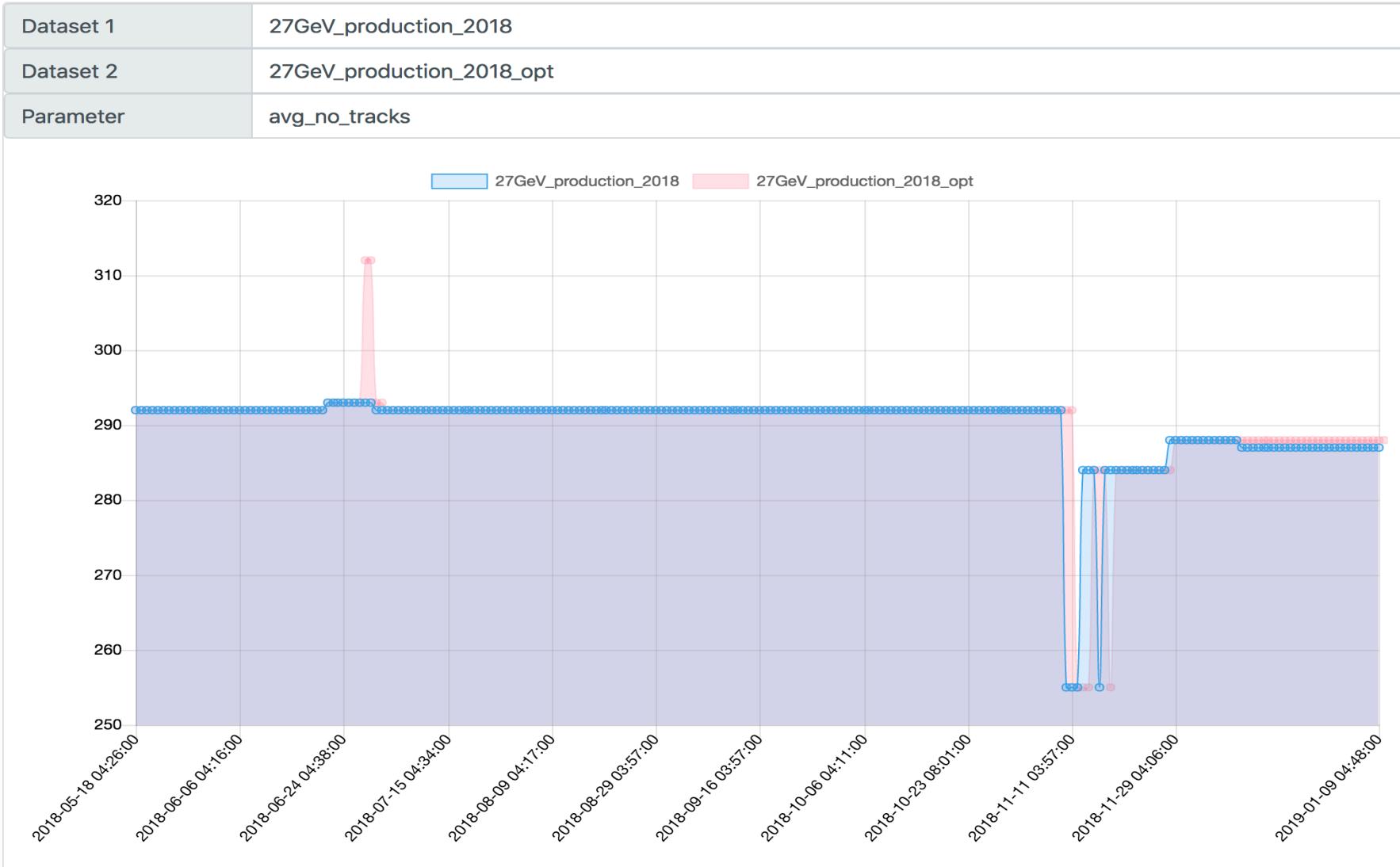
# Nightly Job monitoring

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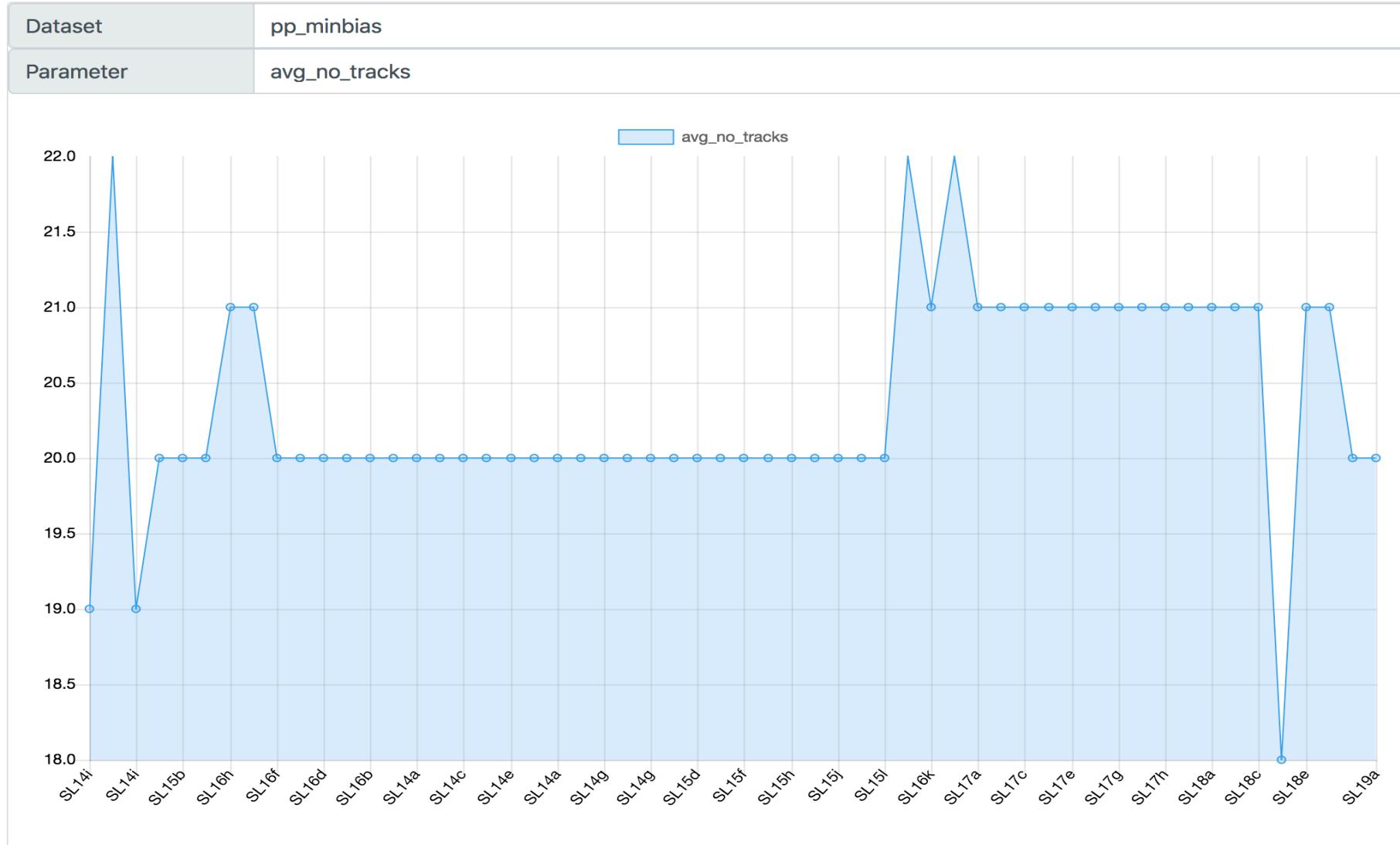
Nightly Tests  
Add New Test  
Precision  
Precision Modification  
Week Status  
**Dataset Change Identification**  
Dataset Compare  
Dataset w.r.t. Library



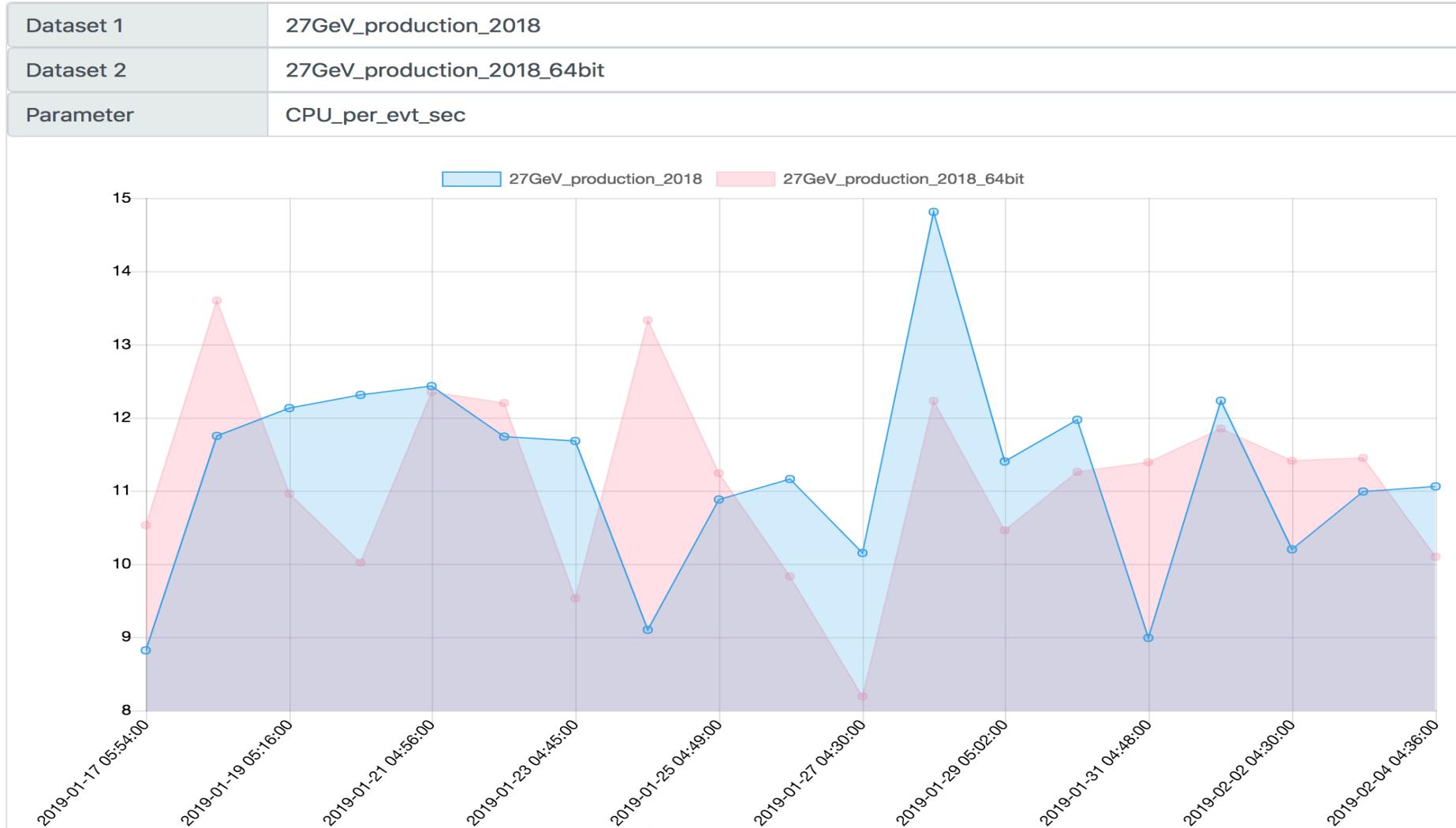
# Dataset comparison



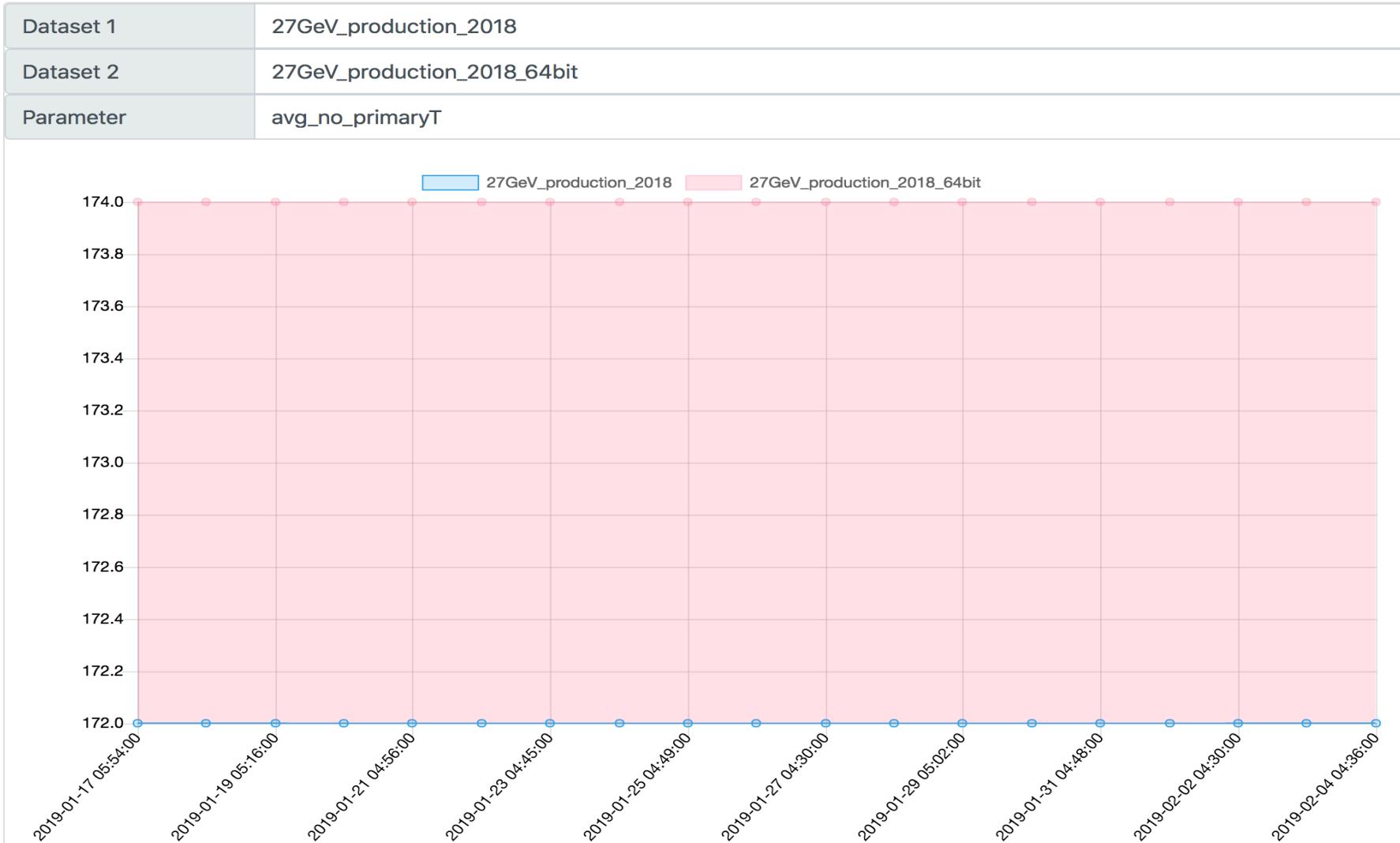
# Dataset w.r.t. Library



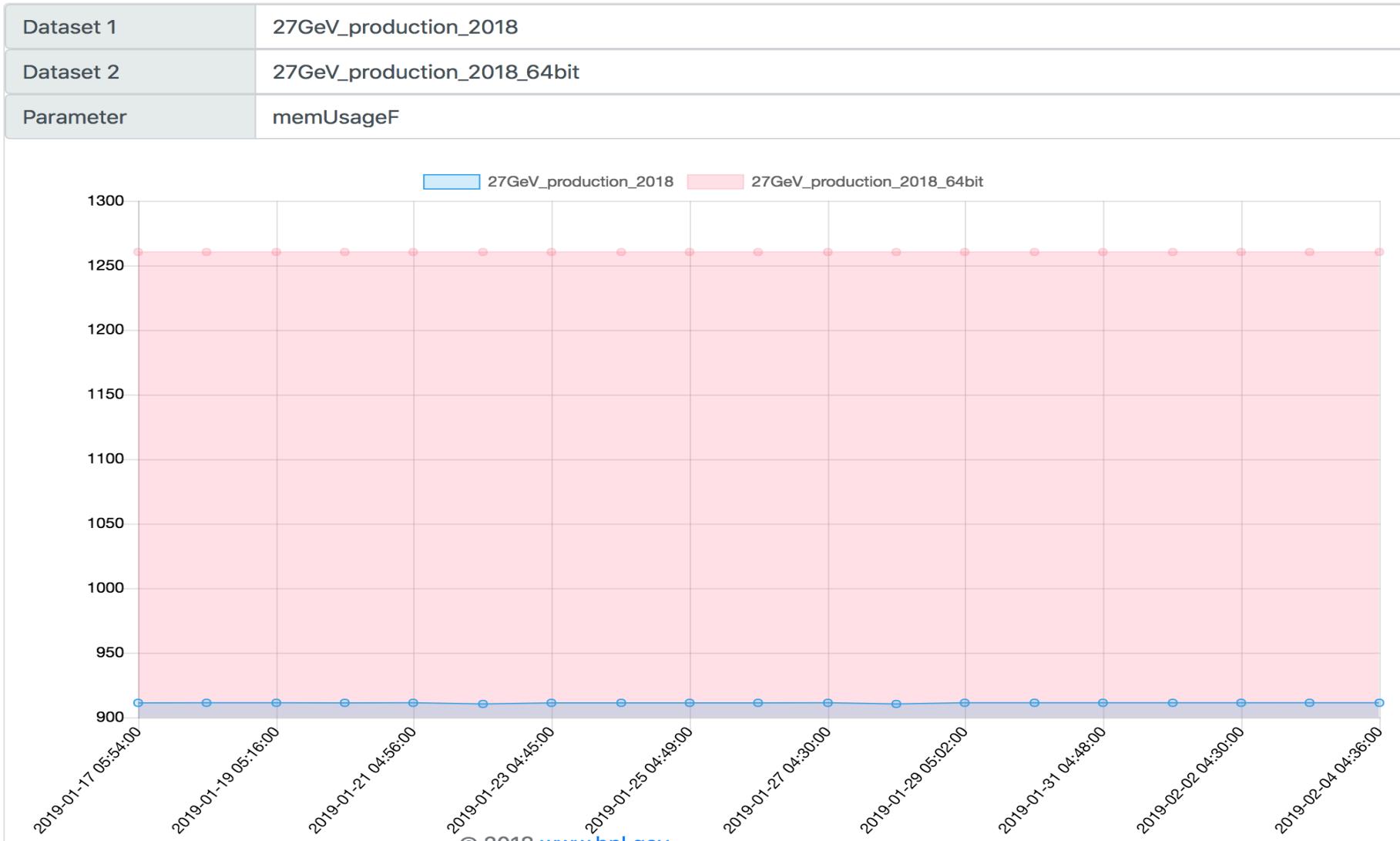
# 32 bit to 64 bit conversion



# 32 bit to 64 bit conversion

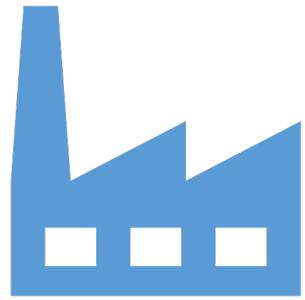


# 32 bit to 64 bit conversion



# PHENIX

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Production



OSG exploration

# Production

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- Current framework
  - Insert → Insertion of information into the database
  - Create → Creation of job submission files
  - **Submission** → Submission to CRS framework
- Current Dataset
  - 2016 AuAu 200 GeV

Number of jobs	Current status
215832	Processing succeeded
144	Processing failed
19	MD5 mismatch

# OSG Exploration

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- Creation of account
  - Creation of sPHENIX project under OSG - **Done**
  - Creation of account to access the resources - **Done**
- Execution of sample jobs
  - With specific requirement (e.g. 4 GB memory) - **Done**
  - With singularity image - **in progress**
  - To a specific site - **in progress**
- Library integration with OSG CVMFS
  - Requested to RCF regarding this - **in process**

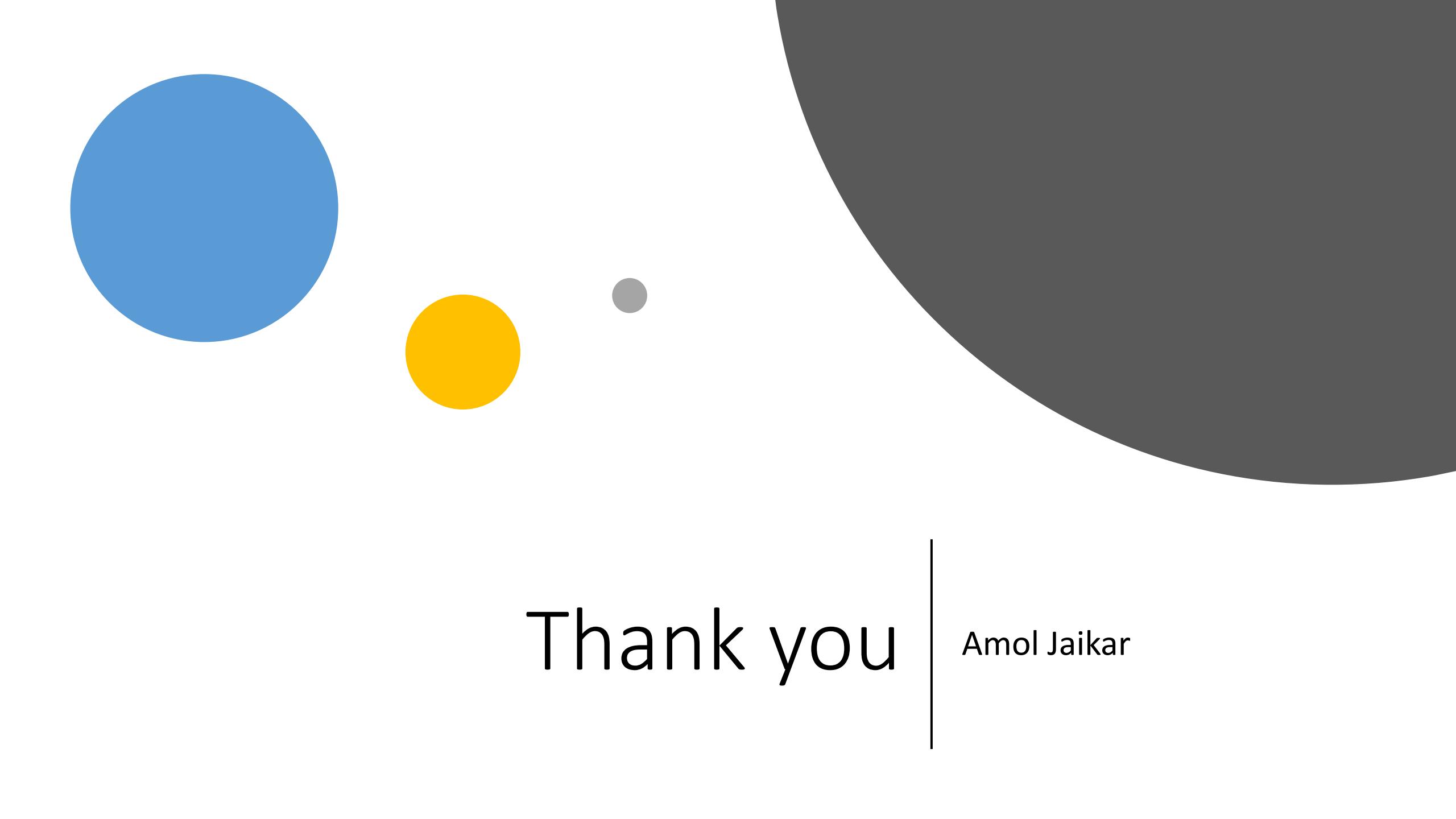
## Future work

### STAR

- BirdView deployment
- Database optimization
- Framework optimization
- Continue production

### PHENIX

- OSG exploration
- Continue production



The background features abstract geometric shapes: a large blue circle on the left, a smaller yellow circle below it, a small grey dot between them, and a large dark grey shape on the right.

Thank you

Amol Jaikar