

FST Run 24 Readiness

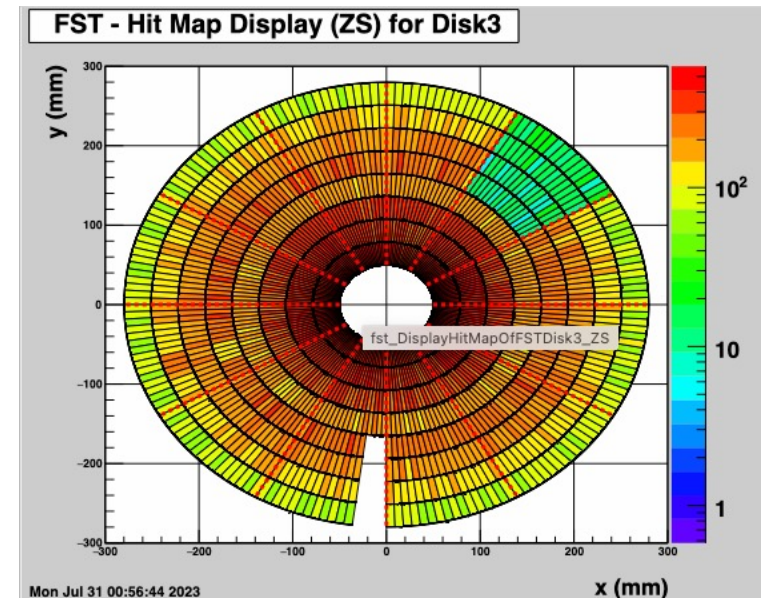
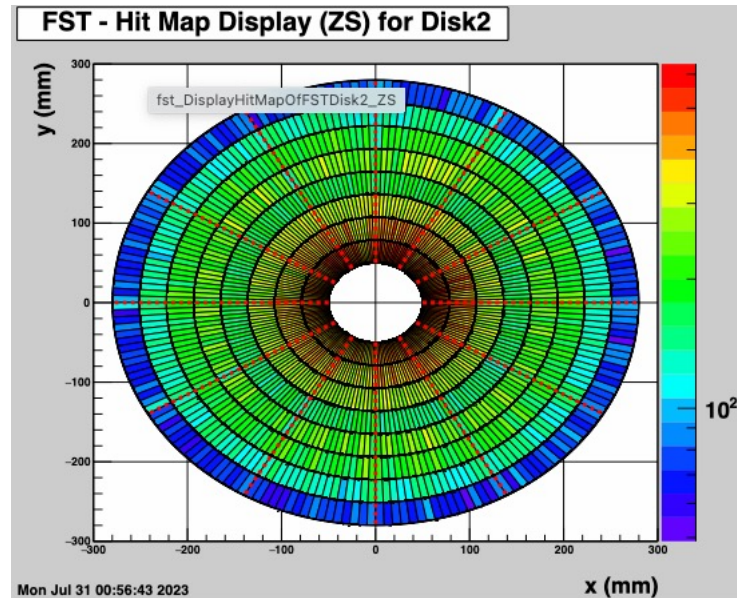
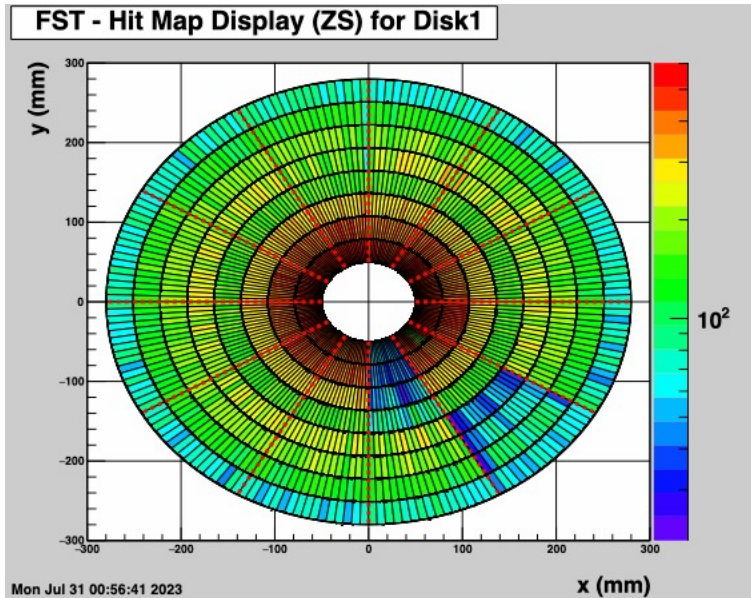
Gavin Wilks (on behalf of the FST group)

University of Illinois at Chicago

Thursday, March 28th

End of Run 23 Operation

Run 24212001 (07/31/2023 12:06 am)



- FST operated successfully during Run 23
- Consistent with beginning of Run 23:
 - 1 missing APV chip.
 - 5 HV channels were running at lower than ideal HV.

Activities during the shutdown

Log of post-run 23 FST maintenance/testing:

<https://drupal.star.bnl.gov/STAR/blog/gwilks3/FST-Run-24-Preparation-and-Testing-022624>

02/26/24-02/29/24 (Gavin Wilks) Run 24 Preparation:

- Physically inspected FST cooling and electronic connections. No issues.
- Started FST NOVEC cooling system.
 - Issue with reading 3 reservoir PVs originating from 1 OMEGA module (more info on next slide).
- Ramped up FST HV with no issues (multiple times), pedestals match previous pedestal/noise values with both pole tips open (Jan. 2023).
 - Lighting conditions within STAR hall affects the sensor noise.
 - Bias currents are consistent or lower than values recorded in Jan. 2023.
- Cooling system left running to monitor leak rate.

Activities during the shutdown

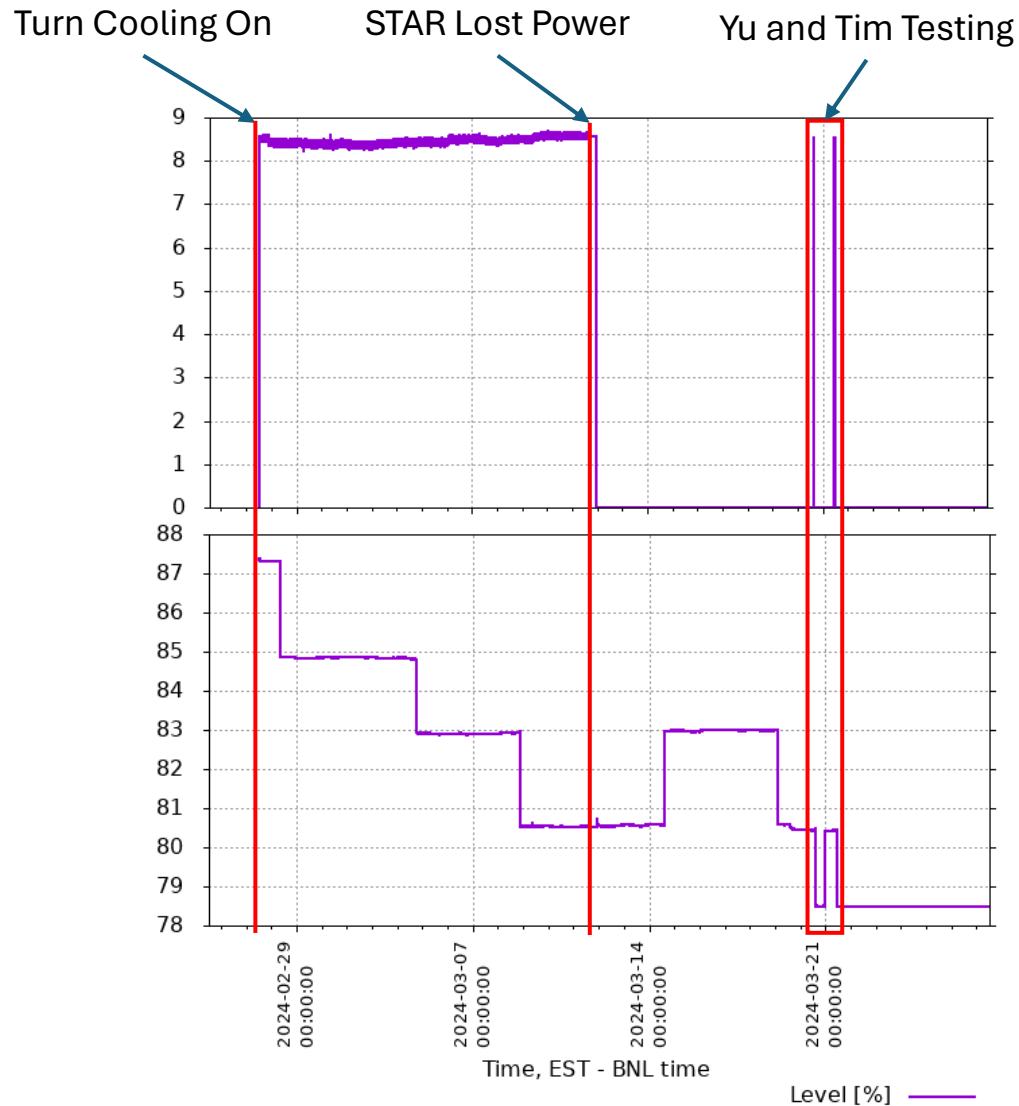
03/20/2024-03/21/2024 (Yu Hu and Tim Camarda) Addressing Missing PVs:

- Power cycled cooling rack. Missing PVs persist.
- Attempted swapping the ethernet cable and switch. Missing PVs persisted.
- OMEGA EIT-D module was identified as the issue, and a replacement has been ordered.
- Tim will help us to replace this module.

Other

- Pedestal and noise values were updated with values from all good pedestal runs that exist for the FST.

FST Cooling System Leak Rate



- Leak rate at end of Run 23: ~0.47%
- Recent leak rate before power loss: ~0.45%
- We will start up the cooling system again on 04/02/2024 when we can monitor in person.

Planned activities

04/02/2024-04/04/2024 Final Testing and Training New Expert:

- Gavin will travel to BNL.
- Final pedestal, noise, and bias current check on the FST now that both pole tips are closed.
- Gavin will train Souvik Paul (Stony Brook University) on FST operations in-person.
- Souvik will monitor the FST over the course of Run 24.

04//2024 (Ziyue Zhang):

- Checking FST latency.

Summary

- We will conclude FST run readiness testing on 04/04/2024.
- Souvik Paul will train to be on-call expert from 04/02-04/04.
- Ziyue Zhang will check latency for the commissioning of the FST.

- Souvik will remain on-call expert during Run 24.
- Other experts (Gavin Wilks, Ziyue Zhang) will provide support remotely.