



# IHEP Remote Operation Center Report

Ye Chen



中国科学院高能物理研究所  
*Institute of High Energy Physics*  
*Chinese Academy of Sciences*

2024/11/16, Qingdao



[Introduction](#)

[IHEP ROC in 2024](#)

[Person-powers and Facilities](#)

[Summary and Outlook](#)



- The Institute of High Energy Physics (IHEP), a Chinese Academy of Sciences research institute, is China's biggest laboratory for the study of particle physics.
- Working at IHEP, there are over 1400 full-time staffs, as well as over 500 postdocs and graduate students.
- IHEP's main campus is at Yuquan Road in the west part of Beijing, with an area around  $306,666 \text{ m}^2$ .
- Particle physics is a very collaborative and a very international field, and we have partnerships and experiment collaborations with dozens of universities and research institutions across China and worldwide.

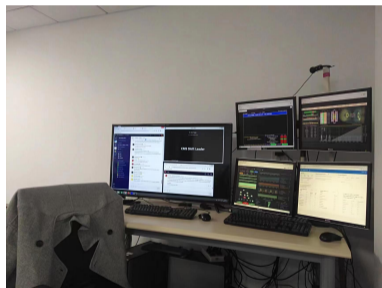
<http://www.ihep.cas.cn/>, welcome to visit, online and in person!



IHEP, Beijing, 2009



IHEP, Beijing, 2023



- Established in 2009, with joint efforts from CMS group and Computing Center.
- Inactive for several years after LS1. Reactivated in 2023, for CMS trigger shifts.

# CMS Central Shifts

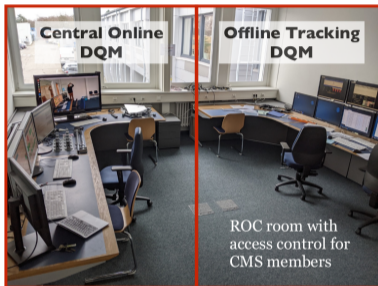


## Shift Crew of the CMS experiment

- Oversee CMS operations: Run Field Manager (RFM) or Offline Run Manager (ORM)
- Core operations team: Shift Leader, Trigger, DAQ, DQM, or Technical shifter.
  - Remote shifts from authorized Remote Operating Center (ROC) will be possible for Trigger and DQM shifters.
- Subsystem expert operator: Detector expert On Call (DOC).

# CMS ROC Status

## DESY ROC



- Four shifts workspaces

## FNAL ROC



- Eight shifts workspaces

– photos from CMS ROC managers

- Along with FNAL and DESY ROC, IHEP ROC is the third CMS certificated ROC now.
- A complementary to each other in different time zones.



Introduction

IHEP ROC in 2024

Person-powers and Facilities

Summary and Outlook



- September 2023, starting CMS ROC qualification for trigger shift.
- September 2023, IHEP ROC status report to CMS management.
- January 2024, IHEP ROC upgrade with new Trigger Workstations.
- March 2024, 2024 trigger shifts at IHEP ROC.
- April 2024, local management team and documentation ready.
- April 2024, DQM pilot shifts with some used facilities.
- April 2024, Trigger and DQM parallel shifts tests.
- August 2024, DQM workstates upgrade.
- October 2024, Completion of shifts for ROC qualification.
- 2024 autumn, CMS ROC qualification, for trigger shift and for DQM shift.
- 2024 winter, be ready for 2025 data-taken year.





- A well-defined location enabling shifts to take place quietly, safely and without interruptions.
- A dedicated person must be assigned who is responsible for the local remote shift operation from the ROC.
- An overall amount of  $\geq 50$  shifts must be carried out per ROC, per year during a typical physics data taking year.
- ...

– google document author: Kaori Maeshima



Introduction

IHEP ROC in 2024

Person-powers and Facilities

Summary and Outlook



## IHEP ROC contact persons

Ye Chen (IHEP)

Li Yuan (Beihang University)

Tahir Javaid (Beihang University/IHEP)

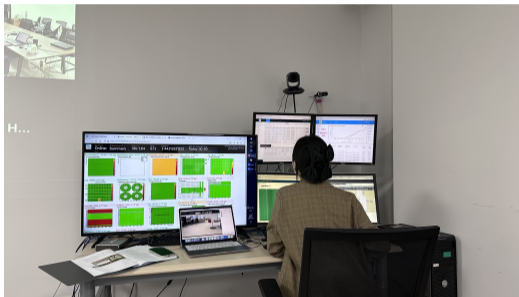
## Computing support

Xuantong Zhang (Computing Center, IHEP)

## Administrative support

Hongjuan Xu (EPC, IHEP)

Lei Tian (EPC, IHEP)



– Photos by TAN Longsheng (Beihang University)

CHEN Shiyang (morning trigger shifter, Tsinghua University) and GAO Hong (morning DQM shifter, Beihang University) on 2024/05/25 at IHEP ROC.



Name	Institute	Shifts	Shifts (Trainee)
Mingtao Zhang	Peking University	7	2
Shuangyuan Wang	Zhejiang University	5	2
Mingyang Zhu	Zhejiang University	3	2
Shiyang Chen	Tsinghua University	3	2
Yiyang Zhao	Tsinghua University	2	2
Yuji Li	Fudan University	12	2
Yilin Zhou	Fudan University	4	2
Ye Chen	IHEP	14	
Total		50	



Name	Institute	Shifts	Shifts (Trainee)
Tahir Javaid	Beihang University	3	
Yuji Li	Fudan University	6	
Longsheng Tan	Beihang University	9	1
Hong Gao	Beihang University	6	1
Anwar Zada	IHEP	9	1
Bolin Li	Nanjing Normal University	10	1
Nazima Bi	IHEP	6	1
Haozhong Yang	IHEP	2	1
Total		51	



system	item	num	Type	status	comment
ROC	Room	1		good	38.82 $m^2$
	workspace	3		good	

Operation	PC	1	Dell workstation		2023
	Monitor	4	Dell		2024
	TV	2	Xiaomi		2024
Training/Backup	PC	1	Dell workstation		2023
	Monitor	2	Dell		2024

Communication	PC	1	Dell		2024
	Monitor	1	Dell		2024
	Webcam	1			2024

Table: Trigger Shift Workstations



Operation	PC	1	Dell workstation		2024
	Monitor	4	Dell		2024
Training/Backup	Laptop	1	Lenovo		2024

Communication	Laptop	1	Lenovo		2024
	Monitor	1			2024

**Table:** DQM Shift Workstations

Communication	PC	1	Dell		2024
	Monitor	1	Xiaomi	good	
	Webcam	1			2024
	speaker	1			2023
Communication 2	phone	1		good	+86 10 8823 6988
Communication 3	CERNPhoneApp	1	Huawei	good	+41 22 76 60232

**Table:** ROC Communication System





- Zhicheng Tang
- Xuantong Zhang, Mengyao Qi and IHEP Computing Center
- Hongjuan Xu, Lei Tian, Ruiqi Luo and IHEP EPC secretaries
- CMS Secretariat
- CMS Management
- CMS Engagement Office
- CMS ROC officers
- CMS Run Coordination
- CMS Trigger Coordination
- CMS ROC Managers
- CMS PPD DQM DC Coordination
- CMS Shifters
- CMS China Institutes
- CERN Service Desk
- CMS IHEP Group



Introduction

IHEP ROC in 2024

Person-powers and Facilities

Summary and Outlook



- Certificated as an official CMS ROC.
- Along with trigger shift workspace, DQM shift workspace was added.
- At least 50+50 shifts per data taken year at IHEP ROC.
- We are looking forward to continuing further hosting CMS shifts.
- Please join in, and take CMS central shift at IHEP ROC!

Thanks for your attention!