

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

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Introduction

IHEP ROC in 2025

Person-powers

Facilities

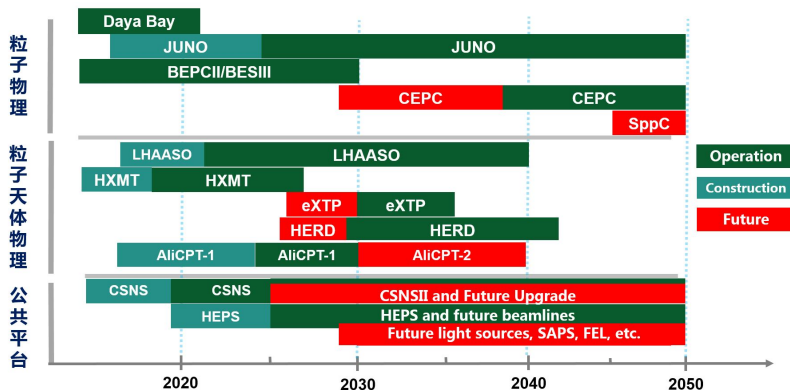
Summary and Outlook



- 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 Introduction



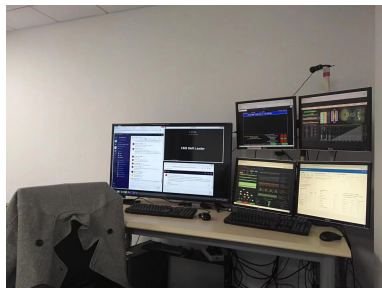
<http://www.ihep.cas.cn/>, welcome to visit, online and in person! Plenty of interesting research facilities and being experienced with international collaboration projects.



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

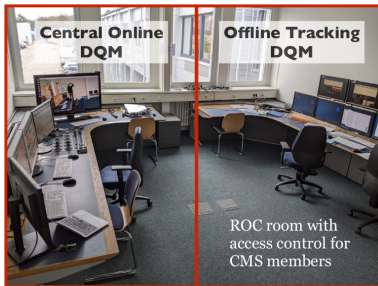


Shift Crew of the CMS experiment

- 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.

Requirements and Qualification

- 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 ≥ 50 shifts must be carried out per ROC, per year during a typical physics data taking year.
- ...

– google document author: Kaori Maeshima



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- September 2022, remote trigger shift at IHEP ROC.
- September 2023, IHEP ROC status report to CMS management.
- January 2024, IHEP ROC upgrage with new Trigger Workstations.
- March 2024, 2024 trigger shifts at IHEP ROC.
- April 2024, Trigger and DQM parallel shifts tests.
- August 2024, DQM workstates upgrade.
- October 2024, Completion of shifts for ROC qualification.
- 2024 winter, IHEP ROC maintainance.
- March 2025, TRG and DQM shifts at IHEP ROC.
- May 2025, initializing agreement draft



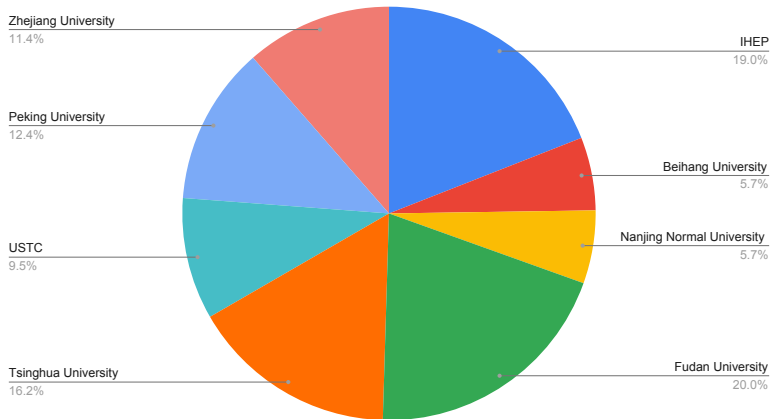
Name	Institute	Shifts	Trainee
Zhipeng Cui	Nanjing Normal University	3	
Leyun Gao	Peking University	3	2
Ruobing Jiang	Peking University	4	2
Shiyang Chen	Tsinghua University	5	
Yiyang Zhao	Tsinghua University	2	
Yuji Li	Fudan University	2	
Yilin Zhou	Fudan University	7	
Shuangyuan Wang	Zhejiang University	6	
Mingyang Zhu	Zhejiang University	6	
Jinjing Gu	Tsinghua University	3	2
Nazima Bi	IHEP	3	2
Jiateng Peng	Fudan University	3	2
Ye Chen	IHEP	7	
Total		52	

2025 Scheduled and Completed DQM Shifts at IHEP ROC



Name	Institute	Shifts	Trainee
Anwar Zada	IHEP	2	
Nazima Bi	IHEP	2	
Longsheng Tan	Beihang University	3	
Haozhong Yang	IHEP	6	
Liangliang Chen	Nanjing Normal University	3	
Yilin Zhou	Fudan University	7	1
Xing Cheng	Tsinghua University	3	1
Yuji Li	Fudan University	4	
Luobing Wang	USTC	2	1
Chengjun Yu	USTC	2	1
Wangmei Zha	USTC	2	1
Xin Wu	USTC	2	1
Zijian Wang	PKU	3	1
Youpeng Wu	PKU	3	1
Chong Liu	Beihang University	3	1
Zhan Zhang	USTC	2	1
Shiyang Chen	Tsinghua University	4	1
Total		53	

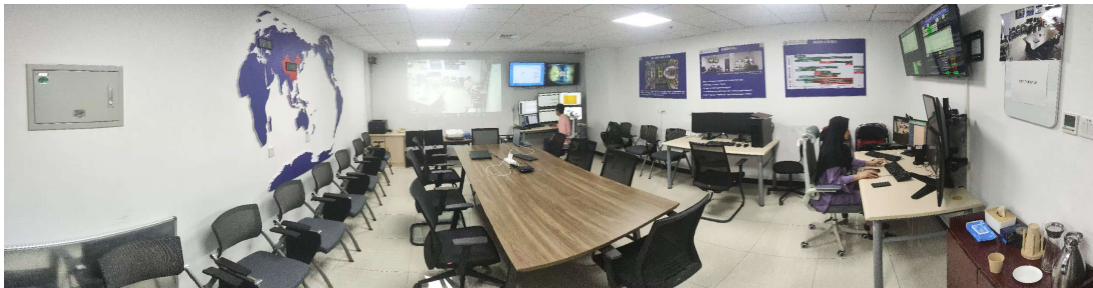
2025 Scheduled and Completed Shifts at IHEP ROC





– Photos by Longsheng Tan (Beihang University)

Ruobing Jiang (morning trigger shifter, Peking University), Haozhong Yang (morning DQM shifter, IHEP) and Liangliang Chen (morning DQM trainee shifter, Nanjing Normal University) on 2025/04/27 at IHEP ROC.



Possible Improvement for CMS Phase-2?



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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)

Jie Du (EPC, IHEP)



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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
	TV	1	Xiaomi		2025
Training/Backup	Laptop	1	Lenovo		2025

Communication	Laptop	1	Lenovo		2025
	Monitor	1			2025

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



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- Zhicheng Tang
- Xuantong Zhang, Mengyao Qi, Tao Cui and IHEP Computing Center
- Hongjuan Xu, Lei Tian, Ruiqi Luo, Jie Du, Jing Zhou and IHEP Experiment Physics Center 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
- IHEP Management
- CMS IHEP Group

- Certificated as an official CMS ROC.
- Administration procedure standalization, also as a preparation for CMS Phase-2.
- At least 50+50 shifts per regular 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!