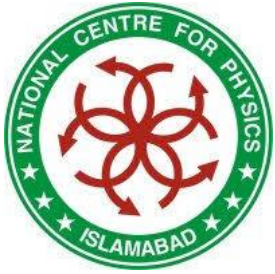


# 7<sup>th</sup> International Workshop on Tracking Detector in High Energy Physics

October 22-24, 2024

Experimental High Energy Physics, CoE Physics  
National Centre for Physics, Islamabad



## Introduction

The Experimental High Energy Physics (EHEP) department at the National Centre for Physics (NCP), Islamabad is organizing a workshop aimed at providing a platform for the Pakistani high-energy physics community, particularly young students and researchers, to learn and discuss the latest developments on tracking detector technologies and their applications in high-energy physics experiments.

The EHEP department is actively involved in the Phase-II upgrade project of the Compact Muon Solenoid (CMS) tracker. CMS is one of the experiments conducted at the Large Hadron Collider (LHC), the world's largest accelerator located at CERN on the border of Switzerland and France. NCP is one of six certified centers for silicon sensors qualification and one of the eight centers for silicon module assembly and testing. It is also the only center responsible for TB2S ladder assembly and qualification within the CMS tracker collaboration. A dedicated laboratory equipped with state-of-the-art instrumentation has been established at NCP.

The CMS tracker will precisely measure the trajectories and momenta of charged particles resulting from proton-proton collisions at the center of the CMS experiment. This workshop will also delve into recent progress and future prospects of tracking detectors.

## Topics Covered

- Silicon Detectors: Physics and Principle
- Tracking Detectors at LHC and their Performance
- CMS Phase-2 Tracker Upgrade Project
- CMS Tracker Mechanics and Ladder Assembly
- Silicon Strip and Pixel Detectors
- CMS Tracker 2S Detector Assembly and Testing
- Gas Electron Multiplier as a Tracking Detector
- Resistive Plate Chambers as a Tracking Detector

## Participation

The graduate/undergraduate students, faculty members, scientists, engineers from universities and R&D organizations are encouraged to apply.

## Registration Fee

Students: 3000, PKRE Employees/Professionals: 6000 PKR

Accommodation: 3000 PKR

## Directors

Qaisar Ahsan (NCP, Pakistan)  
Ishaq Ahmad (NCP, Pakistan)  
Muhammad Aftab Rafiq (NCP, Pakistan)  
Ashfaq Ahmad (NCP, Pakistan)

## Advisory Committee

Duccio Abbaneo (CERN, Switzerland)  
Alan Honma (CERN, Switzerland)  
Andrea Venturi (INFN, Italy)  
Marko Dragicevic (HEPHY, Austria)  
Ulrich Heintz (Brown, USA)

## Tentative Speakers

Ulrich Heintz (Brown University, USA)  
Andreas Musiggler (DESY, Germany)  
Viktor Veszpremi (Wigner RCP, Hungary)  
Sally Seidel (University of New Mexico, USA)  
Muhammad Aftab Rafiq (NCP, Pakistan)  
Ashfaq Ahmad (NCP, Pakistan)  
Francesco Moscatelli (INFN, Italy)  
Imran Malik Awan (NCP, Pakistan)  
Stefan Maier (KIT, Germany)  
Saleh Muhammad (NCP, Pakistan)  
Waqar Ahmed (NCP, Pakistan)  
Muhammad Irfan Asghar (NCP, Pakistan)  
Imdad Ali (NCP, Pakistan)  
Bora Akgun (Bogazici Uni. Turkey)

## Local Organizers

Muhammad Usman  
Waheed Mumtaz  
Imran Malik Awan  
Waqar Ahmed  
Wajid Ali Khan  
Muhammad Irfan Asghar  
Rabia Rasheed  
Tanzeel Murtaza  
Zeeshan Ahmad

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**APPLICATION DEADLINE**

**October 01, 2024**

## Contact Information

Collaborations & Academic Activities Department  
(CAAD)