



# Workshop on Astrophysics and Cosmology

October 20, 2016

**National Centre for Physics**

QAU Campus, Shahdra Valley Road, Islamabad, Pakistan

## Introduction

The field of Astrophysics and Cosmology has grown a lot over the past few decades. After the detection of Gravitational Waves last year by LIGO experiment, the field of astrophysics and cosmology has come into the limelight of modern science. National Centre for Physics (NCP) has setup a Working Group on astrophysics and cosmology under the patronage of Dr. Ishfaq Ahmad (*N.I, H.I, S.I*), Chairman Board of Governors, NCP.

NCP is organizing a one-day Workshop on Astrophysics and Cosmology on Oct 20, 2016 to provide the young researchers and graduate students an introduction to the current state of research in the field of astrophysics and cosmology. It is intended for beginning graduate students, as well as to the finishing undergraduate students. The aim of the workshop is to foster discussion about all aspects of astrophysics and cosmology, focusing mostly on their cosmological implications, through a small number of invited talks and discussion. As such, the activity will serve as a forum where the young participants in the field will have a chance to initiate research collaborations at national and international level.

## Topics to be Covered

- Introduction to Cosmology, Standard Model of Cosmology
- Inflationary Cosmology and CMB
- Dark Matter and Galaxy Rotation
- Problem of Baryon Asymmetry (Baryo-genesis)
- Dark Energy and Cosmological Constant Problem
- Black Hole Physics Gravitational Waves
- Black Hole Information Paradox and ER=EPR Conjecture

## Participation

Active BS level students, graduate and post graduate students enrolled in Physics program at HEC recognized universities/Institutes and post graduate colleges are encouraged to apply for participation. Participation of BS level students has been thought to be useful to introduce them to the exciting field of astrophysics and cosmology. As a rule, travel expenses of the participants should be borne by their home institutes. However, partial travel assistance may be provided to a few selected participants residing outside Islamabad.

## How to apply

Application form can be accessed at: <http://www.ncp.edu.pk>. Duly signed scanned copy of the application form should be submitted to the Activity Secretariat by Email: [tpd-office@ncp.edu.pk](mailto:tpd-office@ncp.edu.pk) on or before **Oct 05, 2016**. All applicants are required to mention their CNIC in the Application Form.

**For further information, please contact:**

**Collaborations & Academic Activities Department (CAAD)**

[caad@ncp.edu.pk](mailto:caad@ncp.edu.pk)

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## Directors

Hafeez R. Hoorani (NCP)  
Mohsin Siddiq (NCP)  
Mansoor-ur-Rehman (QAU)

## Technical Committee

M. Junaid (NCP)  
Shahin Iqbal (NCP)  
Abid. H. Mujtaba (CIIT)

## Invited Speakers

Fayyazuddin (NCP)  
Mansoor-ur-Rehman (QAU)  
Fazeel Khan (IST)  
Abid H. Mujtaba (CIIT)  
Mubashir Jamil (NUST)  
M. Junaid (NCP)

## Organizing Committee

Mohsin Siddiq (NCP)  
M. Junaid (NCP)  
Shahin Iqbal (NCP)  
Abdul Hamid (NCP)  
Naveed Imran (NCP)



**APPLICATION  
DEADLINE**

**October 05, 2016**