

Session Program

6-9 Dec 2023



10th International Conference on Gravitation and Cosmology: New Horizons and Singularities in Gravity (ICGC 2023)

Workshop on Cosmology

IIT Guwahati

Wednesday 6 December

14:15

Workshop on Cosmology

Session | Location: IIT Guwahati | Conveners: Pravabati chingangbam, Girish Kulkarni

14:15–14:45
Mapping the baryonic Universe: a new window into the cosmos (Invited Talk)
Speaker
Hamsa Padmanabhan

14:45–15:00 **Self-interactions of ULDM to the rescue? (Session 2)**
Speaker
Bihag Dave

14:45–15:00
Using Big Bang Nucleosynthesis to constrain $f(R)$ gravity scalarons and primordial black hole masses (Session 1)
Speaker
Mr ABHIJIT TALUKDAR

15:00–15:15
Exploring Cosmic Anisotropy in the Bianchi-I Cosmological Model (Session 1)
Speaker
ANSHUL Verma

15:00–15:15
Model-independent reconstruction of the evolution of dark energy using Gaussian process regression (Session 2)
Speaker
Bikash Ranjan Dinda

15:15–15:30
Probing the signatures of astrophysical scatter in the EoR 21cm signal using auto-bispectrum (Session 2)
Speaker
Chandra Shekhar Murmu

15:15–15:30
Detectable signatures of non-Bunch-Davies 3-point correlation from primordial magnetic fields: CMB μT spectrum (Session 1)
Speaker
Arko Bhaumik

15:30–15:45
Effects of Z3 symmetric dark matter models on global 21-cm signal (Session 2)
Speaker
Debarun Paul

15:30–15:45 **Extremely magnified stars in cluster lenses (Session 1)**

Speaker
Ashish Kumar Meena

15:45-16:00
An effective field theory approach to understand the primordial magnetogenesis (Session 1)

Speaker
Mr Ashu Kushwaha

15:45-16:00 **Dark energy, D-branes, and Pulsar Timing Arrays (Session 2)**

Speaker
Ms Debika Chowdhury

16:00-16:15
Ruling out Strongly Interacting Dark Matter-Dark Radiation Models from Joint Observations of Cosmic Microwave Background and Quasar Absorption Spectra (Session 1)

Speaker
Dr Atrideb Chatterjee

16:00-16:15
Statistical Approaches to Study statistical Isotropy in CMB Sky maps (Session 2)

Speaker
Dipanshu G

16:15-16:30
Squeezing, Chaos and Thermalization in Periodically Driven Quantum Systems: The Case of Bosonic Preheating (Session 1)

Speaker
Ayan Chakraborty

16:15-16:30
Expansion-collapse duality between Einstein and Jordan frames: Implications at quantum level (Session 2)

Speaker
Dipayan Mukherjee

16:30

Thursday 7 December

14:30

Workshop on Cosmology

Session | **Location:** IIT Guwahati | **Conveners:** Pravabati chingangbam, Girish Kulkarni

14:30–14:45

Probing the HI distribution during post-reionization using the redshifted 21-cm marked power spectrum (Session 2)

Speaker

Dr Mohammad Kamran

14:30–14:45

Morphological Characterization of Galactic Foreground Emissions (Session 1)

Speaker

Fazlu Rahman

14:45–15:00

Cosmological events on the stochastic background of inflationary gravitational waves (Session 2)

Speaker

N Malsawmtluangi

14:45–15:00

Ultra-light primordial black holes from first-order phase transition with unique gravitational wave spectrum (Session 1)

Speaker

Indrajit Saha

15:00–15:15

Measuring secondary halo bias using nearest neighbor distributions (Session 1)

Speaker

Kaustubh Gupta

15:00–15:15

Emergence of cosmic space with Barrow entropy, a non-equilibrium thermodynamic description (Session 2)

Speaker

NANDHIDA KRISHNAN P

15:15–15:30

Galaxy-dark matter connection of photometric galaxies from the HSC-SSP Survey using weak lensing (Session 2)

Speaker

Navin Chaurasiya

15:15–15:30

Impact of sources of Epoch of Reionization (EoR) on the 21-cm bispectrum (Session 1)

Speaker

Leon Noble

15:30–15:45

The abundance of core--collapsed subhalos in SIDM: insights from structure formation in Λ CDM (Session 2)**Speaker**

Neev Shah

15:30–15:45

The co-evolution of supermassive black holes and their host haloes (Session 1)**Speaker**

Mahavir Sharma

15:45–16:00

Ultra-low mass primordial black holes in the early universe can explain the PTA signal (Session 2)**Speaker**

Nilanjandev Bhaumik

15:45–16:00

Primordial black hole reheating and its possible signatures (Session 1)**Speaker**

MD RIAJUL Haque

16:00

Friday 8 December

14:15

Workshop on Cosmology

Session | **Location:** IIT Guwahati | **Conveners:** Girish Kulkarni, Pravabati chingangbam

14:15–14:45 **Instrumentation for redshifted 21-cm line observations (Invited Talk)**

Speaker

Saurabh Singh

14:45–15:00

Gravitational Waves Background from Quintessential Inflation and NANOGrav data (Session 1)

Speaker

Mr NUR JAMAN

14:45–15:00

The origin of supermassive black holes at high redshift (Session 2)

Speaker

Ritik Sharma

15:00–15:15

Reconstructing the universe with machine learning (Session 1)

Speaker

Purba Mukherjee

15:00–15:15

Consistency of loop quantum cosmology with the cosmic microwave background bispectrum (Session 2)

Speaker

Roshna K

15:15–15:30

Loop-level contributions of primordial non-Gaussianities and their observational consequences (Session 1)

Speaker

Ragavendra H V

15:15–15:30

Qualitative Stability Analysis of Cosmological models in $f(T, \phi)$ Gravity (Session 2)

Speaker

S SS

15:30–15:45

A Bayesian Neural Network based ILC method to estimate accurate CMB polarization power spectrum over large angular scales (Session 2)

Speaker

Sarvesh Kumar Yadav

15:30–15:45

A geometrical interpretation of foreground filters for HI intensity (Session 1)

Speaker

Dr Rahul Kothari

15:45-16:00

Precision Weak Lensing Analysis In CMB Observations For Upcoming Missions (Session 1)**Speaker**

Rajorshi Chandra

15:45-16:00

HI stacking predictions for upcoming surveys with SKA precursors (Session 2)**Speaker**

Sauraj Bharti

16:00-16:15

Cosmology from Cross-Correlation of ACT-DR4 CMB Lensing and DES-Y3 Cosmic Shear (Session 2)**Speaker**

Shabbir Shaikh

16:00-16:15

Distinguishing cosmological models through quantum signatures of primordial perturbations (Session 1)**Speaker**

Rathul nath Raveendran

16:30

Saturday 9 December

14:30

Workshop on Cosmology

Session | **Location:** IIT Guwahati | **Conveners:** Pravabati chingangbam, Girish Kulkarni

14:30–15:00

The dynamics of Dark matter and the halo from Cluster to Dwarf scales (Invited Talk)

Speaker

Susmita Adhikari

15:00–15:15

Loop contributions to the scalar power spectrum due to quartic order action in ultra slow roll inflation (Session 2)

Speaker

Mr SUVASHIS MAITY

15:00–15:15

Non-linear joint density-velocity evolution in $f(R)$ theories of modified gravity (Session 1)

Speaker

Sharvari Nadkarni-Ghosh

15:15–15:30

Dynamical system analysis in teleparallel gravity with boundary term (Session 1)

Speaker

Mr Siddheshwar Kadam

15:15–15:30

A Local Perspective on Hubble Tension from Cosmological N-body Simulations (Session 2)

Speaker

Swati Gavas

15:30–15:45

Synchrotron radiation from cosmic string wakes. (Session 1)

Speaker

Soumen Nayak

15:30–15:45

Signature flip in deceleration parameter: A thermodynamic phase transition? (Session 2)

Speaker

Tanima Duary

15:45–16:00

Non-linear regression with errors on both axes and its implications on Hubble tension (Session 2)

Speaker

Ujjwal Upadhyay

15:45-16:00

A semi-analytical treatment of coupled CDM-massive neutrino perturbations in diverse cosmological backgrounds (Session 1)**Speaker**

Sourav Pal

16:00-16:15

Dark energy in light of the early JWST observations (Session 2)**Speaker**

upala mukherjee

16:00-16:15

A new method to simultaneously determine the reionization history and power spectrum (Session 1)**Speaker**

Suman Pramanick

16:15-16:30

The possibility of Q-balls as cosmological and galactic dark matter (Session 1)**Speaker**

Susobhan Mandal

16:15-16:30

Towards a possible solution to the Hubble tension with Horndeski gravity (Session 2)**Speaker**

Yashi Tiwari

17:00