



4th Symposium of the BRICS Association  
on Gravity, Astrophysics and Cosmology

**BRICS-AGAC 2024**



**EVENT  
SCHEDULE**

# 17 DECEMBER 2024 (TUE)

Venue #1: Shooting Floor, A Block, SGT University

Venue #2: Room 205, A Block, SGT University

9:30 AM - 10:00 AM Registration

10:00 AM - 10:40 AM Inauguration

**M. Sami**

Director, CCSP,  
SGT University, India  
Vice President, BRICS-AGAC

**M. M. Chaturvedi**

Vice Chancellor,  
SGT University, India

**Rong-Gen Cai\***

President, BRICS-AGAC

10:40 AM - 11:00 AM Tea Break

11:00 AM - 1:00 PM

Plenary Session - I

**Anjan A. Sen**

CTP, Jamia Milia Islamia,  
India

**VENUE #1**

3x40'  
(35'+5')

Tensions in Cosmological  
Observations: Hints for  
New Physics?

**Anzhong Wang**

Baylor University, USA

**T. R. Seshadri**  
University of Delhi

From Loop Quantum  
Cosmology to Loop  
Quantum Black Holes

**H. K. Jassal**

IISER Mohali, India

A Critical Re-Analysis of Low  
Redshift Cosmological  
Datasets

1:00 PM - 2:10 PM Lunch & Photo

2:10 PM - 4:00 PM

VENUE #1

Plenary Session - II

2x35'  
(30'+5')

**Sergey Sushkov**  
Kazan State University, Russia

**Sang Pyo Kim**

Effective Actions in dS and High Curvature Terms

Gunsan National University, South Korea

**Suratna Das**

Some "Background Checks" for Warm Inflation

Ashoka University, India

**Banibrata Mukhopadhyay**

Energy Extraction from a Black Hole and Powerful Astrophysical Jets: Theory, Simulation and Observations (40')

IISc, Bengaluru, India

4:00 PM - 4:15 PM

Tea Break

4:15 PM - 5:50 PM

VENUE #1

Parallel Session - I

7x15'  
(12' + 3')

**Dhiraj K. Hazra**  
IMSc, Chennai

**Taotao Qiu\***

Interpreting PTA Data with Bouncing Cosmology

Huazhong University of Science and Technology, China

**Umang Kumar**

A Generalized Method of Constraining Warm Inflation with CMB Data

Ashoka University, India

**Rahul Dhyani**

Probing Dark Matter - Electron Interaction in the Cosmic Microwave Background Radiation

Shiv Nadar University, India

**Kunal Pandey**

An Alternative Approach towards Neutrino Masses

Jamia Millia Islamia, India

**Shiladitya Porey**

Primordial Dark Sector Relics from Inflaton and  $f(R, \Phi)$  Gravity

Shiv Nadar University, India

**Aman Verma**

Inhomogenous Cosmology

University of Delhi, India

**Tanima Duary**

Warm Inflationary Thermodynamics

CCSP, SGT University, India

**VENUE #2**Parallel Session - II6x15'  
(12' + 3')**Indrani Banerjee**  
NIT Rourkela, India**Anirban Dasgupta**

Signatures of Einstein-Maxwell dilation-axion gravity from the observed quasi-periodic oscillations in black holes

NIT Rourkela, India

**Debasmita Mohanty**Charged Gravastar Model in Non-Commutative Geometry under  $f(T)$  Gravity

BITS Pilani, Hyderabad Campus, India

**Ameya Kolhatkar**Investigating Early and Late-Time Epochs in  $f(Q)$  Gravity

BITS Pilani, Hyderabad Campus, India

**Sayantana Ghosh**

Study of DBI Fields in Modified STGR Using Dynamical System Analysis

BITS Pilani, Hyderabad Campus, India

**Rikpratik Sengupta**

A Novel Model of Non-Singular Oscillating Cosmology on flat RS-II Braneworld

Aliah University, Kolkata, India

**Nandhida Krishnan P**

Modified Cosmology through Barrow Entropy: A Thermodynamic Perspective beyond Equilibrium

CUSAT, Kerala, India

5:50 PM - 7:00 PM

Cultural Programme &amp; Snacks

7:00 PM

Bus to Ananda Guest House

7:30 PM - 9:00 PM

Banquet Dinner

\*- Attendee will be present online

# 18 DECEMBER 2024 (WED)

Venue I: Shooting Floor, A Block, SGT University

Venue II: Room 205, A Block, SGT University

9:50 AM - 11:35 AM

VENUE #1

Plenary Session - III

3x35'  
(30'+5')

**Anjan A. Sen**  
Jamia Milia Islamia, India

**Dhiraj K. Hazra**  
CMB Data: A Discussion  
on Physics and  
Systematics

IMSc, Chennai, India

**Indrani Banerjee**  
Prospects of  
Constraining the Nature  
of Strong Gravity from  
the Event Horizon  
Telescope Data

NIT Rourkela, India

**Li Li\***  
Dark Side of Black Hole:  
Interior Structure and  
Dynamics

Institute of Theoretical  
Physics, CAS, China

11:35 AM - 11:55 AM

Tea Break

11:55 AM - 1:15 PM

VENUE #1

Plenary Session - IV

2x40'  
(35'+5')

**Anzhong Wang**  
Baylor University, USA

**Sergey Sushkov**  
A Cosmological Bounce  
in the Theory of Gravity  
with non-minimal  
derivative

Kazan State University,  
Russia

**S. Shankaranarayanan**  
Gravitational Wave  
Memory as a Tool to  
Constrain Cosmological  
Models

IIT-B, Mumbai, India

1:15 PM - 2:20 PM

Lunch & Photo

\*- Attendee will be present online

2:20 PM - 3:05 PM	Discussion Session	Impact of BRICS-AGAC	
3:05 PM - 4:15 PM	<u>Plenary Session - V</u>		
<b>VENUE #1</b>	3x35' (30'+5')		
	<b>Rathin Adhikari</b> Jamia Milia Islamia, India	<b>Suresh Kumar</b> ΛsCDM Cosmology: A Promising Scenario to relax the Cosmological Tensions	Plaksha University, India
		<b>Mehedi Kalam</b> Slowly Rotating Neutron Stars in Modified Theory of Gravity	Aliah University, Kolkata, India
4:15 PM - 4:30 PM	Tea Break		
4:30 PM - 5:50 PM	<u>Parallel Session - III</u>		
<b>VENUE #1</b>	5x15' (12'+3')		
	<b>Y. Myrzakulov</b> Eurasian National University, Kazakhstan	<b>Shao-Jiang Wang*</b> Black Hole as the Fastest Transmitter	Chinese Academy of Sciences, China
		<b>Nur Jaman</b> CMB Constraints on Natural Inflation with Gauge Field Production	Dhruba Chand Halder College, Kolkata, India
		<b>Mohd. Shahalam</b> Initial Conditions of Pre-Inflation with Generic Potentials in Loop Quantum Cosmology	Integral University Lucknow, India
		<b>Geeth Ongole</b> Revisiting Quantum Black Holes from Effective LQG	Baylor University, USA
		<b>Sarath N.</b> Exploring Emergence of Cosmic Space and Horizon Thermodynamics via Kaniadakis Entropy	IIT Kanpur, India

\*- Attendee will be present online

**VENUE #2**

Parallel Session - IV

4x15'  
(12' + 3')

**Monmoy Molla**

Analysis of Properties  
of some features of  
Neutron Stars

Aliah University,  
Kolkata, India

**Samik Dutta**

Understanding the Very  
High Energy (VHE)  
Gamma-ray emission  
from NGC 4278

BITS Pilani, India

**A. Altabaiyeva**

Eurasian National University, Kazakhstan

**Zenia Zuraq**

Simulating Magnetized  
White Dwarfs by Time  
Evolution:  
Chandrasekhar Limit  
and Beyond

IISc, Bengaluru, India

**Susmita Jana**

Transient Electromagnetic  
Sources can detect  
Solitary Black Holes in  
Milky Way Galaxy

IIT Bombay, India

5:50 PM - 6:15 PM

Tea Break

6:15 PM - 7:30 PM

First Starobinsky  
Memorial Lecture

**Sandip Trivedi\***  
ICTS, Bengaluru

**Alan Guth\***

Inflationary Cosmology:  
Is Our Universe Part of a  
Multiverse?

Victor Weisskopf  
Professor,  
MIT, USA

\*- Attendee will be present online

# 19 DECEMBER 2024 (THU)

Venue I: Shooting Floor, A Block, SGT University

Venue II: Room 205, A Block, SGT University

9:50 AM - 11:10 AM

VENUE #1

Plenary Session - VI

2x40'  
(35'+5')

**K. Myrzakulov**

Eurasian National University, Kazakhstan

**Alexey V. Toporensky**

Compactification  
Scenario in Gauss-  
Bonnet Cosmology

Moscow State University,  
Russia

**Dawood Kothawalla**

Non-Inertial Frames as  
probes of Gravitational  
Fields

IIT-M,  
Chennai, India

11:10 AM - 11:30 AM

Tea Break

11:30 AM - 12:40 PM

VENUE #1

Plenary Session - VII

2x35'  
(30'+5')

**Syed Afsar Abbas**

CCSP, SGT University

**P. K. Sahoo**

f(Q,L<sub>m</sub>) gravity

BITS-Pilani,  
Hyderabad Campus, India

**Sumanta Chakraborty**

Tides: A Story of Love

IASC,  
Kolkata, India

12:40 PM - 2:30 PM

CCSP Visit, Lunch & Photo

2:30 PM - 4:30 PM

VENUE #1

Plenary Session - VIII

3x40'  
(35'+5')

**Rathin Adhikari**

Jamia Milia Islamia, India

**Alessandro R. Marins\***

T.B.D

USTC, Brazil

**Kinjalk Lochan**

Quantum Effects in Late  
Time Cosmology

IISER-Mohali,  
India

**Roy Maartens\***

Probing the Primordial  
Universe with  
Cosmological Surveys

Western Cape University,  
South Africa

\*- Attendee will be present online



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4:30 PM - 5:00 PM

Closing Remarks

**Anzhong Wang**

Secretary, BRICS-AGAC

**Sergey Sushkov**

Vice President, BRICS-AGAC

**Alessandro R. Marins\***

USTC, Brazil