

PROGRAM

of the Third Symposium of the BRICS Association
on Gravity, Astrophysics and Cosmology
August, 29 – September, 3 2019

	Aug, 29	Aug, 30	Aug, 31	Sept, 1	Sept, 2	Sept, 3	
8.00-9.00	Arrival Day	Registration			Excursion & Departure Day	Departure Day	
9.00-10.00				Plenary Session			Plenary Session
10.00-10.30		Opening Ceremony					
10.30-11.00		Plenary Session					
11.00-11.20			Coffee-break	Coffee-break			
11.20-12.40			Plenary Session	Morning Session			
							<i>Sections A,C</i>
12.40-14.00		Lunch	Lunch	Lunch			
14.00-16.00		Afternoon Session	Afternoon Session	Afternoon Session			
		<i>Sections A,B</i>	<i>Sections A,D</i>	<i>Sections D,E</i>			
16.00-16.20		Coffee-break	Coffee-break	Coffee-break			
16.20-17.40		Evening Session	Evening Session	Evening Session			
		<i>Sections A,B</i>	<i>Sections A,E</i>	<i>Sections D,C</i>			
18.00	Welcome Party						
19.00			Banquet				

Plenary talks are of 30-35 min long.

Section talks are of 15-20 min long.

The sections are the following:

- **Section A.** Cosmology, Dark Energy
- **Section B.** Astronomy and Astrophysics
- **Section C.** Black Holes, Wormholes
- **Section D.** General Relativity and Extensions
- **Section E.** Experiments and Observations

30th AUGUST, FRIDAY

8.00-10.00	Registration of participants
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10.00-10.30	Opening Ceremony in Emperor Hall of Kazan Federal University <ul style="list-style-type: none">– Welcome from Vice-Rector of Kazan Federal University– Welcome from Rong-Gen Cai, Director of Institute of Theoretical Physics of Chinese Academy of Sciences, President of BRICS-AGAC– Welcome from Alexei Starobinsky, Academician of Russian Academy of Science, Vice-President of BRICS-AGAC– Welcome from Mohammad Sami, Director of the Center of Theoretical Physics, Vice-President of BRICS-AGAC
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PLENARY SESSION (10.30 – 12.40)

Chair: Sergey Sushkov

10.30-11.05	A.A. Starobinsky <i>Present status of inflation and pre-inflation</i>
11.05-11.40	Rong-Gen Cai <i>Primordial black holes and gravitational waves induced by scalar perturbations</i>
11.40-12.10	Mohammad Sami <i>Joining the two ends: model building requirements and implications</i>
12.10-12.40	I.F. Bikmaev <i>Astronomy in Kazan: from Ivan Simonov to space observatories</i>
12.40-14.00	<i>Lunch</i>

30th AUGUST, FRIDAY

AFTERNOON SESSION (14.00 – 16.00)

SECTION A. COSMOLOGY, DARK ENERGY

Chair: Sergey Chervon

Auditorium 110

14.00-14.20	Maria Skugoreva, Alexey Toporensky <i>Anisotropic cosmological dynamics in $f(T)$ gravity in the presence of a perfect fluid</i>
14.20-14.40	A.V. Nikolaev <i>Cosmology and Astrophysics in Kinetic Scalar Curvature Extended $f(R)$ Gravity</i>
14.40-15.00	Alexey Toporensky and Daniel Muller <i>Initial conditions for Starobinsky inflation in Einstein and Jordan frames</i>
15.00-15.20	Salvatore Capozziello, Anjan A. Sen <i>Model independent constraints on dark energy evolution from low-redshift observations</i>
15.20-15.40	Bijan Saha <i>Spinor field in cosmology: non-minimal coupling</i>
15.40-16.00	R.K. Muharlyamov <i>The anisotropic distribution of the dark energy within the scope of LRS Bianchi type I model</i>
16.00-16.20	<i>Coffee-break</i>

30th AUGUST, FRIDAY

AFTERNOON SESSION (14.00 – 16.00)

SECTION B. ASTRONOMY AND ASTROPHYSICS

Chair: Ilfan Bikmaev

Auditorium 112

14.00-14.20	Tanita Ramburuth-Hurt <i>Dark matter and diffuse radio emission in spiral galaxies</i>
14.20-14.40	Charissa Bronwyn Button <i>The application of the adiabatic scenario to the radio relic hosted in the galaxy cluster Abell 3411-3412</i>
14.40-15.00	Bin Chen, Geoffrey Compere, Yan Liu, Jiang Long and Xuao Zhang <i>Spin and Quadrupole Couplings of IMRACs</i>
15.00-15.20	Byron P. Brassel <i>Dynamics and collapse of radiating stars with a Vaidya geometry</i>
15.20-15.40	Charles Takalana & Paolo Marchegiani <i>Simulated differential observations: Probing the DA and EoR with the Sunyaev-Zel'dovich Effect</i>
15.40-16.00	Ahmed Ayad Mohamed Ali <i>Phenomenology of axion-photon coupling in the jets of AGNs</i>
16.00-16.20	<i>Coffee-break</i>

30th AUGUST, FRIDAY

EVENING SESSION (16.20 – 18.00)

SECTION A. COSMOLOGY, DARK ENERGY

Chair: Alexei Toporensky

Auditorium 110

16.20-16.40	Artyom V. Yurov , Valerian A. Yurov <i>The Hawking radiation and the horizon of a De Sitter universe</i>
16.40-17.00	Avinash Singh , H. K. Jassal <i>The effect of tachyon scalar field dark energy on matter clustering</i>
17.00-17.20	K.A. Bolshakova , S.V. Chervon <i>Cosmological solutions with the Higgs potential in tensor-multi-scalar gravity</i>
17.20-17.40	Boris E. Meierovich <i>Phase Equilibrium of a Black Hole and Dark Matter</i>

SECTION B. ASTRONOMY AND ASTROPHYSICS

Chair: Igor Fomin

Auditorium 112

16.20-16.40	V.V. Uchaikin <i>An explicitly solvable model of correlations in the spatial distribution of galaxies</i>
16.40-17.00	Bikmaev I.F., Burenin R.A. , Khamitov I.M., Sunyaev R.A. <i>Optical identifications of PLANCK cluster of galaxies by using RTT-150</i>
17.00-17.20	R.Kh. Karimov <i>Accretion disk properties around Kerr-Sen black hole</i>
17.20-17.40	V.A.Popov and I.G.Abdullin <i>Partially Bose-condensed dark matter</i>

18.00	Welcome Party
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31st AUGUST, SATURDAY

PLENARY SESSION (9.00 – 12.20)

Chair: Kirill Bronnikov

Auditorium 110

9.00-9.30	Julio Fabris <i>Stability of EMD black holes</i>
9.30-10.00	Maxim Yu. Khlopov <i>Cosmoparticle physics of dark matter</i>
10.00-10.30	Sang Pyo Kim <i>QED in Magnetic Universe and Magnetized Black Holes</i>
10.30-11.00	R.A. Konoplya <i>General parametrization for spherical and axial black holes and representation of numerical black-hole solutions in analytical form</i>

11.00-11.20	<i>Coffee-break</i>
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Chair: Kirill Bronnikov

Auditorium 110

11.20-11.50	Dmitri Gal'tsov <i>Thermodynamics of black hole spacetimes with line singularities</i>
11.50-12.20	M.S.Volkov <i>Varying the Horndeski Lagrangian within the Palatini approach</i>

12.20-14.00	<i>Lunch</i>
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31st AUGUST, SATURDAY

AFTERNOON SESSION (14.00 – 16.00)

SECTION A. COSMOLOGY, DARK ENERGY

Chair: Arkadiy Popov

Auditorium 110

14.00-14.30	Yurii Ignat'ev <i>The self-consistent field method and Einstein's macroscopic equations for the early Universe</i>
14.30-15.00	Igor Fomin <i>Reconstruction of general relativistic cosmological solutions in modified gravity theories</i>
15.00-15.20	S.V. Chervon, I.V. Fomin, T.I. Mayorova <i>Chiral cosmological model of $f(R)$ gravity with kinetic scalar curvature</i>
15.20-15.40	S .V. Chervon, I.V. Fomin, T.I. Mayorova, A.V. Khapaeva <i>Cosmological parameters of $f(R)$ gravity with kinetic scalar curvature</i>
15.40-16.00	F. Zaripov <i>Oscillatory solutions in cosmological models and in a centrally symmetric space in a modified theory of gravity</i>

16.00-16.20	<i>Coffee-break</i>
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31st AUGUST, SATURDAY

AFTERNOON SESSION (14.00 – 16.00)

SECTION D. GENERAL RELATIVITY AND EXTENSIONS

Chair: Sergei Bolokhov

Auditorium 112

14.00-14.20	D.V. Galtsov and K.V. Kobialko <i>Relative trapping surfaces and optical images of bumpy spacetimes</i>
14.20-14.40	Alexander Gusev and Osamu Kameya <i>The spectrum of gravitational radiation from a multilayer single pulsars</i>
14.40-15.00	R.V. Ilin , S.A. Paston <i>General form of gravitational energy superpotential in theories with high order derivatives</i>
15.00-15.20	E.O. Pozdeeva , M. Sami, A.V. Toporensky, S.Yu. Vernov <i>De Sitter solutions properties in the Gauss-Bonnet gravity</i>
15.20-15.40	D.E.Groshev , A.B.Balakin <i>Polarization and stratification of axionically active plasma in a dyon magnetosphere</i>
15.40-16.00	D.R. Khakimov <i>On symmetries of five-dimensional spaces</i>
16.00-16.20	<i>Coffee-break</i>

31st AUGUST, SATURDAY

EVENING SESSION (16.20 – 18.20)

SECTION A. COSMOLOGY, DARK ENERGY

Chair: Sergei Vernov

Auditorium 110

16.20-16.35	V.D. Ivashchuk , A.A. Kobtsev <i>Cosmological solutions with 2 factor spaces in EGB-Lambda model</i>
16.35-16.50	V.D. Ivashchuk , K.K. Ernazarov <i>Cosmological solutions with 3 factor spaces in EGB-Lambda model</i>
16.50-17.10	A. Agathonov , Yu. Ignat'ev <i>The Peculiarities of the Cosmological Models Based on Scalar Singlet with Higgs Potential</i>
17.10-17.30	Yu.G. Ignatev, A.R. Samigullina <i>On limit euclide cycles in cosmological models based on scalar fields</i>
17.30-17.50	Ildus Nurgaliev <i>Nonsingular Cosmology</i>
17.50-18.10	I. Kokh <i>Qualitative and Numerical Analysis of a Cosmological Model Based on an Asymmetric Scalar Doublet with Minimal Couplings</i>

31st AUGUST, SATURDAY

EVENING SESSION (16.20 – 18.20)

SECTION E. EXPERIMENTS AND OBSERVATIONS

Chair: Sergei Rubin

Auditorium 112

16.20-16.40	ChengGang Qin <i>Relativistic tidal effects on clock-comparison experiments</i>
16.40-17.00	Yajie Wang <i>Improved frequency-shift gravity-gradient compensation on canceling the Raman-pulse-duration effect in atomic gravimeters</i>
17.00-17.20	Yujie Tan <i>Relativistic effects in atomic gravimeters</i>
17.20-17.40	Nthabiseng Khanye <i>Multi-frequency analysis of SUSY dark matter annihilation in the gravitationally lensing cluster Abell 1689</i>
17.40-18.00	Ashlynn Merial Le Ray <i>Constraining star formation history with Fermi-LAT observations of the gamma-ray opacity of the universe</i>
18.00-18.20	B.P. Pavlov, S.M. Kozyrev, S.N. Andrianov, R.A. Daishev, A.F. Skachilov <i>Creation of a compact laser interferometric complex (CLIC) on the principle of gravitationally induced frequency shift</i>

1st SEPTEMBER, SUNDAY

PLENARY SESSION (9.00 – 11.00)

Chair: Dmitry Gal'tsov

Auditorium 110

9.00-9.30	S. Capozziello <i>Cosmographic reconstruction to discriminate between modified gravity and dark energy</i>
9.30-10.00	Victor Berezin <i>On surface terms and double layers in quadratic gravity</i>
10.00-10.30	V.S. Gorelik <i>Excitation and detection of paraphotons and axions during laser action on dielectric media</i>
10.30-11.00	S.D. Maharaj <i>The generalized Vaidya spacetime and relativistic stars</i>
11.00-11.20	<i>Coffee-break</i>

1st SEPTEMBER, SUNDAY

MORNING SESSION (11.20 – 12.40)

SECTION A. COSMOLOGY, DARK ENERGY

Chair: Bijan Saha

Auditorium 110

11.20-11.40	S.V. Chervon <i>Chiral cosmological models as equivalent of theories of gravity with higher derivatives</i>
11.40-12.00	S.Yu. Vernov <i>Exact spherically symmetric static solutions and Kantowski-Sachs universes in models with non-minimally coupled scalar fields</i>
12.00-12.20	S.V. Sushkov <i>Cosmological perturbations during the kinetic inflation in the Horndeski theory</i>

SECTION C. BLACK HOLES, WORMHOLES

Chair: Sang Pyo Kim

Auditorium 112

11.20-11.40	V.D. Ivashchuk, S.V. Bolokhov <i>Black hole and Melvin-type solutions related to Lie algebras of rank 4</i>
11.40-12.00	K.A. Bronnikov, S.V. Bolokhov, M.V. Skvortsova <i>Cylindrical wormholes and energy conditions</i>
12.00-12.20	A.A. Chaadaev, S.V. Chervon <i>Spherically symmetric solutions in $f(R)$ gravity with a kinetic scalar curvature</i>
12.20-14.00	<i>Lunch</i>

1st SEPTEMBER, SUNDAY

AFTERNOON SESSION (14.00 – 16.40)

SECTION D. GENERAL RELATIVITY AND EXTENSIONS

Chair: Vladimir Popov

Auditorium 110

14.00-14.20	D.E. Afanasiev, M.O. Katanaev <i>Classification of global solutions in General relativity with electromagnetic field and cosmological constant</i>
14.20-14.40	Sergey Rubin <i>Matter induced branes</i>
14.40-15.00	Denis Rodrigues <i>On the instability of some k-essence space-times</i>
15.00-15.20	D.L. Abrarov <i>Classical mechanics in standart functional Lobachevsky space</i>
15.20-15.40	Ilya Bakhmatov <i>Tri-vector deformations of d=11 supergravity</i>
15.40-16.00	M. Lulinsky <i>Geodesics in superspace</i>
16.00-16.20	A.Yu. Kuznetsova <i>Fell bundles over local groups and local groups graded C*-algebras</i>
16.20-16.40	

16.40-17.00	Closing the Symposium
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19.00	Banquet
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1st SEPTEMBER, SUNDAY

AFTERNOON SESSION (14.00 – 16.40)

SECTION E. EXPERIMENTS AND OBSERVATIONS

Chair: Arkady Popov

Auditorium 112

14.00-14.20	Chenggang Shao <i>Recent Progress on Probing Lorentz Violation with Gravitational Experiments in HUST</i>
14.20-14.40	V.S. Gorelik, Dongxue Bi <i>Relativity properties of phonons in diamond crystal</i>
14.40-15.00	T.Yu. Alpin <i>Dynamooptical activity of chiral media, induced by gravitational radiation</i>

SECTION C. BLACK HOLES, WORMHOLES

15.00-15.20	D.V. Galtsov and I.A. Bogush <i>Rotating Fisher-Janis-Newman-Winicour spacetimes</i>
15.20-15.40	O.B. Zaslavskii <i>Super-Penrose process</i>
15.40-16.00	P.E. Kashargin , S.V. Sushkov, E. Isanaev <i>Collapsing dust wormholes</i>
16.00-16.20	D. Lisenkov , N.R. Khusnutdinov, A.A. Popov <i>Vacuum polarization of a quantized scalar field in the thermal state in wormhole spacetime with infinitely short throat</i>
16.20-16.40	A. Popov, A. Osman <i>Self-force of a static charge in spacetime of a wormhole with an infinitely short throat</i>

16.40-17.00	Closing the Symposium
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19.00	Banquet
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