



**1<sup>st</sup> PU International Conference on Gravitation and Cosmology**  
**January 27-31, 2019**  
**The Group of Gravitation and Cosmology**  
 Department of Mathematics  
 University of the Punjab, Lahore-Pakistan



## CONFERENCE SCHEDULE

Time (hours)	Sunday, January 27, 2019 Day-1
1600 – 1800	<b>REGISTRATION</b> <b>Venue:</b> The University Club, University of the Punjab, Lahore
1800 – 2100	<b>WELCOME RECEPTION (Only for Outstation Guests)</b> <b>Venue:</b> The University Club, University of the Punjab, Lahore

Time (hours)	Monday, January 28, 2019 Day-2
0830 – 0930	<b>REGISTRATION</b>
0930 – 1030	<b>OPENING CEREMONY</b>
1030 – 1115	<b>Malcolm A. H. MacCallum (Public Talk)</b> Black Holes and Neutron Stars
1115 – 1130	<b>GROUP PHOTO</b>
1130 – 1200	<b>Tea Break</b>
<b>Chair: Bobomurat Ahmedov</b>	
1200 – 1240	<b>Asghar Qadir</b> A Tribute to Stephen Hawking
1240 – 1315	<b>Suhail Zaki Farooqui</b> Prospects of Wind and Solar Thermal Energy for Pakistan
1315 – 1430	<b>Lunch Break</b>
<b>Parallel Session–I (Main Hall)</b>	
<b>Chair: Sijie Gao</b>	
1430 – 1455	<b>Ghulam Shabbir</b> How to Find the Proper Curvature Collineations?



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1455 – 1515	<b>Ibrar Hussain</b> A Review of the Applications of Approximate Lie Symmetry Methods to Define the Energy Content of Some Black Hole Spacetimes
1515 – 1535	<b>Rabia Saleem</b> A Study of Warm Tachyon Inflation Using Hamilton's Jacobian Method
1535 – 1550	<b>Qanitah Ama-Tul-Mughani</b> Study of String Cloud with Minimal Geometric Deformation
1550 – 1610	<b>Tea Break</b>
<b>Chair: Hyung Won Lee</b>	
1610 – 1625	<b>Sehrish Iftikhar</b> Particle Dynamics Near a Black Hole
1625 – 1640	<b>Saadia Mumtaz</b> Dynamical Analysis of Oscillating Gaseous System
1640 – 1655	<b>Sobia Sadiq</b> Stability of Charged Anisotropic Polytropes
1655 – 1710	<b>Sara Ashraf</b> Thermodynamics of Modified Cosmic Chaplygin Gas
<b>Time (hours)</b>	<b>Parallel Session-II (Committee Room)</b> <b>Day-2</b>
<b>Chair: Sebastian Bahamonde</b>	
1430 – 1450	<b>Suhail Khan</b> Classification of LRS Bianchi Type I Spacetime Through its Conformal Killing Vector Fields
1450 – 1505	<b>Umber Sheikh</b> Rainbow Gravity: A Bridge between General Relativity and Quantum Theory
1505 – 1520	<b>Muhammad Zubair</b> Some Cosmic Aspects in Modified Teleparallel Theories
1520 – 1535	<b>Muhammad Rizwan Shahzad</b> A New Model of Quintessence Compact Stars in Rastall Theory of Gravity
1535 – 1550	<b>Hammad Nazar</b> Complexity Factor for Anisotropic Source in Non-minimal Coupling Metric $f(R)$ Gravity
1550 – 1610	<b>Tea Break</b>



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<b>Chair: Khalid Saifullah</b>	
1610 – 1625	<b>Fatima Shahid</b> Some Reconstructed $f(R)$ Models and Current Cosmos
1625 – 1640	<b>Muhammad Tahir</b> Gravitational Perfect Fluid Collapse in Gauss-Bonnet Gravity
1640 – 1655	<b>Rimsha Babar</b> Quantum Tunneling and Corrections for Spin-1 Particles
1655 – 1710	<b>Nimra Irshad</b> Analysis of Anisotropic Universe via Interacting Dark Energy Model

Time (hours)	Parallel Session-III (Room 103) Day-2
<b>Chair: Ghulam Shabbir</b>	
1430 – 1450	<b>Ayub Khan Yousaf Zai</b> Wavelet Analysis of Interaction of Radio Wave with the Ionosphere
1450 – 1505	<b>Hasrat Hussain Shah</b> Electromagnetic Counterpart of Gravitational Waves from the Coalescence of Black Hole Binaries
1505 – 1520	<b>Naeem Yousaf</b> Dynamical Behavior of Particles Near Brane-World Black Hole
1520 – 1535	<b>Umer Rehman</b> Theoretical Investigation of Possible Prevention of Gravitational Collapse of Extremely Dense Magneto-Plasma Astrophysical Environment
1535 – 1550	<b>Naveed Rafiq</b> Energy Momentum Prescriptions of Ruban Spacetime
1550 – 1610	<b>Tea Break</b>
<b>Chair: Muhammad Jawed Iqbal</b>	
1610 – 1625	<b>Allah Ditta</b> Matter Accretion onto a Brane-World Black Hole via Hamiltonian Approach
1625 – 1640	<b>Wajiha Javed</b> Hawking Radiation Phenomenon
1640 – 1655	<b>Saeeda Zia</b> Physiognomies of Cosmic Compact Objects through Modified Theory of Gravity
1655 – 1710	<b>Farzana Kousar</b> Static Spherically Symmetric Wormholes in Generalized $f(R, \varphi)$ Gravity



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Time (hours)	Tuesday, January 29, 2019 Day-3
<b>Chair: Malcolm A. H. MacCallum</b>	
0930 – 1010	<b>Hyung Won Lee</b> Gravitational Wave Detection and Multimessenger Astrophysics
1010 – 1050	<b>Francesco De Paolis</b> Probing the Dark Matter Nature by Gravitational Microlensing
1050 – 1130	<b>Seyed Muhammad Sadegh Movahed</b> Statistical Self-similarity of Pulsar Timing Residuals: A Robust Pipeline for Searching Stochastic Gravitational Wave
1130 – 1200	<b>Tea Break</b>
<b>Chair: Cosimo Stornaiolo</b>	
1200 – 1225	<b>Jameel Un Nabi</b> Accelerating the r-process: Allowed and Forbidden Beta Decay Rates of Waiting Point Nuclei.
1225 – 1250	<b>Andrew Miller</b> Results of a Search for a Postmerger Remnant of Binary Neutron Merger GW170817
1250 – 1315	<b>Ghulam Abbas</b> Strong Gravitational Lensing for the Photons Coupled to Weyl Tensor in Kiselev Black Hole
1315 – 1400	<b>Lunch Break</b>
1400 – 2100	<b>LOCAL EXCURSION</b> <b>(Only for Outstation Guests)</b>



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Time (hours)		Wednesday, January 30, 2019 Day-4	
<b>Chair: Seyed Muhammad Sadegh Movahed</b>			
0930 – 1010	<b>Sijie Gao</b>	First Law and Smarr Formula of Black Hole Mechanics in Nonlinear Gauge Theories	
1010 – 1050	<b>Gonzalo J. Olmo</b>	Using General Relativity to Explore Modified Gravity Effects	
1050 – 1130	<b>Cosimo Stornaiolo</b>	Tomographic Analysis of the De Sitter Model in Quantum Cosmology	
1130 – 1200	<b>Tea Break</b>		
<b>Chair: Gonzalo J. Olmo</b>			
1200 – 1235	<b>Sebastian Bahamonde</b>	New Exact Black Holes Solutions in $f(R, \phi, X)$ Gravity by Noether's Symmetry Approach	
1235 – 1255	<b>Muhammad Azam</b>	Modeling of Compact Objects and their Stability	
1255 – 1315	<b>Abdul Jawad</b>	Cosmological Implications of Scalar Field Models	
1315 – 1430	<b>Lunch Break</b>		
<b>Parallel Session-I (Main Hall)</b>			
<b>Chair: Asghar Qadir</b>			
1430 – 1455	<b>Zahid Ahmad</b>	Gravitational Collapse of Anisotropic Fluid in $f(R)$ Gravity	
1455– 1515	<b>M. Jamil Amir</b>	Gravitational Dust Collapse in $f(R, T)$ Modified Theory of Gravity	
1515 – 1535	<b>Hafiza Rizwana Kausar</b>	Mathematical and Physical Overview of Gravitational Waves	
1535 – 1550	<b>Jameela Abbas</b>	Deflection of Light for Kerr-Newman-AdS Black Hole with Quintessence	
1550 – 1610	<b>Tea Break</b>		



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<b>Chair: Ayub Khan Yousaf Zai</b>	
1610 – 1625	<b>Rubab Manzoor</b> Stellar Evolution in Modified Gravity
1625 – 1640	<b>Iqra Nawazish</b> Existence of Physically Viable Wormholes in $f(R, T)$ Gravity
1640 – 1655	<b>Arfa Waseem</b> Study of Stellar Structures in Curvature-Matter Coupling Gravity
1655 – 1710	<b>Nisa Amir</b> The Einstein Toolkit
<b>Time (hours)</b>	<b>Parallel Session-II (Committee Room) Day-4</b>
<b>Chair: Jameel Un Nabi</b>	
1430 – 1450	<b>Muhammad Jawed Iqbal / Syed Faisal ur Rahman</b> Studying Dark Energy and the Accelerated Expansion of the Universe through Multi-Wave and Multi-Wavelength Observations
1450 – 1505	<b>Jamil Ahmad</b> Quartic Quasi-Topological Gravity
1505 – 1520	<b>Usman Alam Gillani</b> Linear Cosmological Perturbations in almost Scale-Invariant Fourth-Order Gravity
1520 – 1535	<b>Askar Ali</b> Rotating Black Holes and Nonlinear Electrodynamics
1535 – 1550	<b>Rashida Bibi</b> Solution of the Einstein-Maxwell Equations with Anisotropic Negative Pressure
1550 – 1610	<b>Tea Break</b>
<b>Chair: Sabbir Rahman</b>	
1610 – 1625	<b>Muhammad Ilyas</b> Killing Symmetry of Specific Non-static Spherically Symmetric Space-times in Presence of Torsion Fields
1625 – 1640	<b>Muhammad Usman</b> The Cosmological Constant and the Vacuum Energy of the Quintessential Dark Energy Higgs Potential
1640 – 1655	<b>Muhammad Bilal Azam</b> Dark Energy in Causal Set Theory



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1655 – 1710	<b>Sadia Sattar</b> An Effect of Electromagnetic on Gravitational Collapse in $f(R, T)$ Theory of Gravity
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1900 – 2100	<b>Conference Banquet</b>
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Time (hours)	Thursday, January 31, 2019 Day-5
<b>Chair: Francesco De Paolis</b>	
0930 – 1010	<b>Malcolm A. H. MacCallum</b> Spacetimes with Local Isotropy Groups
1010 – 1050	<b>Bobomurat Ahmedov</b> Optical Properties of Axially Symmetric Compact Gravitational Objects
1050 – 1130	<b>Sabbir Rahman</b> On the Existence of Exotic Matter in Classical Newtonian Mechanics and General Relativity
1130 – 1200	<b>Tea Break</b>
<b>Chair: Muhammad Sharif</b>	
1200 – 1225	<b>Maryam Aghaei Abchouyeh</b> Thermodynamics and Geometry of Anyon Black Holes
1225 – 1245	<b>Ayesha Ikram</b> On the Stability of Einstein Universe
1245 – 1310	<b>Discussions/Comments</b>
1310 – 1345	<b>CLOSING</b>
1345	<b>Lunch</b>