

| Day-01: 29th January 2024 (Monday) | |
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| Time | Programme |
| 08:00-09:30 | Registration |
| 09:30-10:20 | Inauguration |
| 10:20-10:45 | Tea Break |
| Chair: <i>Tanusri Saha-Dasgupta</i> ; SNBNCBS | |
| 10:50-11:35 | Ultrafast Photonics as a Probe of Quantum Topology <i>Ajay K. Sood</i> Indian Institute of Science, Bangalore, India |
| 11:40-12:15 | The Heisenberg limit for laser coherence, with preliminary experimental proposals <i>Howard Wiseman</i> Griffith University, Australia |
| 12:20-12:55 | In search of efficient ways of entanglement routing and solving bottleneck issues <i>Anirban Pathak</i> Jaypee Institute of Information Technology, Noida, India |
| 13:00-14:25 | Lunch Break |
| Chair: <i>Amitabha Lahiri</i> ; SNBNCBS | |
| 14:30-15:05 | Shallow-Depth Variational Quantum Hypothesis Testing <i>Sai Vinjanampathy</i> IIT Bombay, India |
| 15:10-15:45 | From combinatorics to maximally entangled multipartite states <i>Arul Lakshminarayan</i> IIT Madras, India |
| 15:50-16:15 | Tea Break |
| Chair: <i>Parijat Dey</i> , SNBNCBS | |
| 16:20-16:55 | Negative quasiprobability and its implications in quantum foundations <i>Alok Pan</i> IIT Hyderabad |
| 17:00 -17:15 | Quantum pattern engines: work from temporal correlations <i>Varun Narasimhachar</i> IHPC, A*STAR, Singapore |

| Day-02: 30th January 2024 (Tuesday) | |
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| Time | Programme |
| 09:00-09:25 | Registration |
| Chair: <i>Archan S. Majumdar</i> , SNBNCBS | |
| 09:30-10:15 | Occam's Razor, Boltzmann's Brain, and Wigner's Friend: Can we reason about our place in the universe without defining "us?" <i>Charles H. Bennett</i> IBM Research, USA |
| 10:20-10:55 | Characterizing Quantum Networks <i>Otfried Gühne</i> University of Siegen, Germany |
| 11:00-11:25 | Tea Break |
| Chair: <i>Partha Ghose</i> , Tagore Centre | |
| 11:30-12:05 | Interference at the heart of quantum <i>Urbasi Sinha</i> Raman Research Institute, India |
| 12:10-12:45 | Towards testing macrorealism and quantumness of an arbitrarily massive object <i>Dipankar Home</i> Bose Institute, India |
| 12:50 -13:05 | Squashed quantum non-Markovianity: a measure of genuine quantum non-Markovianity in states <i>Manabendra Nath Bera</i> IISER Mohali, India |
| 13:10-14:25 | Lunch Break |
| 14:30-17:30 | Poster Session -I |

| Day-03: 31st January 2024 (Wednesday) | |
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| Time | Programme |
| Chair: <i>Prasanta K. Panigrahi</i>, IISER Kolkata | |
| 09:30 -10:15 | The value reproducibility and the intersubjectivity of quantum measurements based on the theory of quantum perfect correlations <i>Masanao Ozawa</i> Chubu University and Nagoya University, Japan |
| 10:20-10:55 | From indefinite causal order to indefinite input-output direction <i>Giulio Chiribella</i> QICI Quantum Information and Computation Initiative, HKU |
| 11:00-11:30 | Tea Break |
| Chair: <i>Dipankar Home</i>, Bose Institute | |
| 11:35-12:10 | Network quantum information processing <i>Antonio Acin</i> ; ICFO, Spain |
| 12:15-12:50 | Orbital Angular momentum entanglement <i>Anand K. Jha</i> ; IIT Kanpur, India |
| 12:55 -14:25 | Lunch Break |
| Chair: <i>Nirmalya Ghosh</i>, IISER Kolkata | |
| 14:30-15:05 | Telecom-band Entangled Photons for Fiber-based & Integrated Quantum Communication & QI Applications <i>Joyee Ghosh</i> ; IIT Delhi, India |
| 15:10-15:45 | TBA <i>Saikat Ghosh</i> ; IIT Kanpur, India |
| 15:50-16:15 | Tea Break |
| Chair: <i>Sunandan Gangopadhyay</i>, SNBNCBS | |
| 16:20-16:35 | Is There a Finite Complete Set of Monotones in Any Quantum Resource Theory? <i>Chandan Datta</i> ; IIT Jodhpur, India |
| 16:40- 16:55 | Noise is resource-contextual in quantum communication <i>Ananda Gopal Maity</i> ; OIST, Japan |
| 17:00-17:15 | Why does nature reject theories that are more or less incompatible than quantum theory? <i>Sumit Mukherjee</i> ; IISER Kolkata, India |
| 18:30 -21:30 | Conference Dinner |

| Day-04: 01st February 2024 (Thursday) | |
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| Time | Programme |
| Chair: Guruprasad Kar, ISI Kolkata | |
| 09:30-10:15 | How to teach the Bose gas <i>Reinhard F. Werner</i> Leibniz Universität Hannover, Germany |
| 10:20-10:55 | Fundamental limitations on Gaussian quantum key distribution <i>Gerardo Adesso</i> University of Nottingham, UK |
| 11:00-11:25 | Tea Break |
| Chair: Swapan Rana, ISI Kolkata | |
| 11:30-12:05 | Incompatible incompatibilities, and how to make them compatible again <i>Francesco Buscemi</i> Nagoya University, Japan |
| 12:10 -12:45 | Photonic quantum computing using quantum walks <i>C. M. Chandrashekar</i> IISc Bengaluru, India |
| 12:50 -13:05 | Unconditionally secure relativistic multi-party biased coin flipping and die rolling <i>Damián Pitalúa-García</i> University of Cambridge, UK |
| 13:10-14:25 | Lunch Break |
| 14:30-17:30 | Poster Session -II |

| Day-05: 02nd February 2024 (Friday) | |
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| Time | Programme |
| Chair: <i>Debasis Sarkar</i>, Calcutta University | |
| 9:30 -10:15 | Tests of semi-classical gravity and related models in novel regimes <i>Adrian Kent</i> ; University of Cambridge, UK |
| 10:20-10:55 | TBA <i>Sibasish Ghosh</i> ; ISc Chennai, India |
| 11:00-11:25 | Tea Break |
| Chair: <i>Preeti Parashar</i>, ISI Kolkata | |
| 11:30-12:05 | TBA <i>Arun K Pati</i> ; CQuERE, TCG, CREST, India |
| 12:10-12:45 | Laboratory tests of the quantum behaviour of gravity <i>Sougato Bose</i> University College London, UK |
| 12:50-13:05 | Non-Local and Quantum Advantages in Network Coding for Multiple Access Channels <i>Ashutosh Rai</i> ; KAIST, South Korea |
| 13:10 -14:25 | Lunch Break |
| Chair: <i>Saqib Shamim</i>, SNBNCBS | |
| 14:30-15:05 | Free-space quantum communication: Road to satellite quantum communication – A Review <i>R. P. Singh</i> ; PRL Ahmedabad, India |
| 15:10-15:25 | Quantum networks boosted by entanglement with a control system <i>Tamal Guha</i> ; The University of Hong Kong |
| 15:30-15:45 | Activation of the communication utility of entanglement breaking channels <i>Saptarshi Roy</i> ; The University of Hong Kong |
| 15:50-16:15 | Tea Break |
| Chair: <i>Arijit Halder</i>, SNBNCBS | |
| 16:20-16:55 | Bose's notion of indistinguishability -- its extension in the symmetric group sense- quantum statistics of indistinguishable particles <i>Subhash Chaturvedi</i> ; IISER Bhopal, India |
| 17:00-17:15 | Nonlocal Advantage in Vehicle Routing Problem <i>Amit Mukherjee</i> ; IIT Jodhpur, India |
| 17:20 -18:00 | Concluding Session |

| Poster Session I (30th January) | | |
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| Name and Affiliation | Title of the Poster | Board No. |
| Abhinash Kumar Roy; Macquarie University, Australia | Causal order witness and random process matrix using semi-definite programming | 1 |
| Abhishek Sadhu; Raman Research Institute, India | Practical limitations on robustness and scalability of quantum Internet | 2 |
| Akshaya J; TCG CREST, India | Adapting the HHL algorithm to different eras of quantum computing | 3 |
| Anandamay Das Bhowmik; Indian Statistical Institute, Kolkata, India | From no causal loop to absoluteness of cause: discarding the quantum NOT logic | 4 |
| Ananya Chakraborty; S.N.Bose National Centre for Basic Sciences; India | Advantage of Qubit Communication Over The C-bit in Multiple Access Channel | 5 |
| Anirban Roy Chowdhury; S.N. Bose National Centre for Basic Sciences; India | Role of Mutual Information in the Page Curve of Hawking Radiation | 6 |
| Aparajita Bhattacharyya; Harish Chandra Research Institute, India | Modelling probe Hamiltonians for gaining advantage in quantum metrology | 7 |
| Arijit Chatterjee; IISER Pune, India | Quantum Coherence: Its Use in Observing Lee-Yang Zeros and Its Protection Against Decoherence | 8 |
| Arindam Mitra; IIT Bombay, India | Relating CP divisibility of dynamical maps with compatibility of channels | 9 |
| Arkaprabha Ghosal; The Institute of Mathematical Sciences, India | Optimal quantum teleportation of collaboration | 10 |
| Arnab Chakrabarti; Rajiv Gandhi University, India | Prethermalization in driven open quantum systems | 11 |
| Arnab Mukherjee; S.N Bose National Centre for Basic Sciences; India | Fulling-Davies-Unruh effect for accelerated two-level single and entangled atomic systems | 12 |
| Arun Kumar Das; S.N Bose National Centre for Basic Sciences; India | Measurement incompatibility and quantum advantage in communication | 13 |
| Asmita Kumari; S.N Bose National Centre for Basic Sciences; India | Sharing of bipartite nonlocality by unbounded sequential pair of observers | 14 |
| Balakrishnan Viswanathan; IIT Madras, India | Quantum imaging with undetected photons enabled by twin-photon position correlations | 15 |
| Biplab Ghosh; Vivekananda College for Women, India | Exploring quantum properties of bipartite mixed states under coherent and incoherent basis | 16 |
| Bivas Mallick; S.N. Bose National Centre for Basic Sciences, India | Assessing non-Markovian dynamics through moments of the Choi state | 17 |

ICPQIQ: 29 Jan – 02 Feb 2024

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| Bohnishikha Ghosh; University of Warsaw, Poland | Optical backflow in the interference of two beams | 18 |
| Brij Mohan; IISER Mohali, India | Exact Quantum Speed Limits | 19 |
| Chandrima B Pushpan; IIT Palakkad, India | Quantum state transfer using 1D Heisenberg Hamiltonian on quasi-1D lattices | 20 |
| Damián Pitalúa-García; University of Cambridge | Multiphoton and Side-Channel Attacks in Mistrustful Quantum Cryptography | 21 |
| Debarshi Das; University College London, UK | Mass-independent test of quantumness of a massive object | 22 |
| Dharmaraj Ramachandran; BITS Pilani, KK Birla Goa Campus, India | New entanglement measures based on state space geometry | 23 |
| Dinesh Kumar Panda; NISER Bhubaneswar, India | Designer Bell states and quantum-cryptography via efficient single-particle quantum walks | 24 |
| George Biswas; Tamkang University, Taiwan, ROC | Enhancement of Quantum Volume of Noisy Intermediate-Scale Quantum Computing Through Distributed Quantum Computing | 25 |
| Guillem Müller-Rigat; ICFO; Spain | Certification of metrologically useful entanglement in spinor Bose-Einstein condensates | 26 |
| Harikrishnan K. J.; IIT Palakkad, India | Localizing genuine multipartite entanglement in noisy stabilizer states | 27 |
| Hari Krishnan SV; IIT Hyderabad, India | Device-independent quantum key distribution based on an arbitrary input Bell inequality | 28 |
| Himanshu Badhani; The Institute of Mathematical Sciences, India | Virtual subsystems under pseudo-Hermitian evolution | 29 |
| Indranil Biswas; University Of Calcutta, India | Entangled state distillation from single copy mixed states beyond LOCC | 30 |
| Jasleen Kaur; Macquarie University, Australia | A War against non-Markovian Noise: Multi-time Quantum Process Tomography to the Rescue. | 31 |
| Jatin Ghai; The Institute of Mathematical Sciences, India | Negativity of Wigner distribution function as a witness of incompatibility | 32 |
| Jayanth R; Physical Research Laboratory, India | Experimental Shot Noise Measurement Using the Imperfect Detection—A Special Case for Pulsed Laser | 33 |
| Jitendra Joshi; IISER Pune, India | Experimental verification of many-body entanglement using thermodynamic quantities | 34 |
| Jithin G. Krishnan; IIT Palakkad, India | Bounds on localizable entanglement | 35 |
| Karthick Selvan M; Vellore Institute of Technology, India | In this work, we emphasize that \sqrt{B} gate can be used as entangling basis gate for doing | 36 |
| Komal Kumar; BITS Pilani Hyderabad Campus, India | Quantum conditional entropies and steerability of states with maximally mixed marginals | 37 |

ICPQIQC: 29 Jan – 02 Feb 2024

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| Kunal Shukla; Indian Institute of Science, India | Quantum magnetometry using discrete-time quantum walk | 38 |
| Lorenzo Giannelli; The University of Hong Kong | Energy and speed bound in generalized probabilistic theories | 39 |
| Manju C; IIT Palakkad, India | Kicked long-range interacting spin chain | 40 |
| Najirul Islam; Tata Institute of Fundamental Research, Hyderabad, India | Multi-mode Jaynes-Cummings model results for the collapse and the revival of the quantum Rabi oscillations in a lossy resonant cavity | 41 |
| Nifeeya Singh; IIT Roorkee, India | Linear response of nuclei on a quantum computer | 42 |
| Pallabi Chatterjee; IIT Tirupati, India | Quest for optimal quantum resetting protocols | 43 |
| Prabuddha Roy; IISER Berhampur, India | Generalized parity-oblivious communication games powered by quantum preparation contextuality | 44 |
| Prasad Pawar; IIT Gandhinagar, India | Probing Chaotic Phase Transition using Spectral Form Factor of Closed and Open Dicke Model | 45 |
| Pratik Ghosal; Bose Institute, India | Distribution of quantum gravity induced entanglement in many-body systems | 46 |
| Sumit Rout; University of Gdansk, Poland | Unbounded Quantum Advantage in One-Way Strong Communication Complexity of a Distributed Clique Labelling Relation | 47 |

| Poster Session II (01st February) | | |
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| Name and Affiliation | Title of the Poster | Board No. |
| Pritam Roy; S.N. Bose National Centre for Basic Sciences, India | Device-Independent Quantum Secure Direct Communication Under Non-Markovian Quantum Channel | 1 |
| Priya Batra; IISER Pune, India | Physics Informed Neural Network for Robust Quantum Controls | 2 |
| Rajdeep Paul ; IIT Hyderabad, India | Self-testing of unsharpness parameters based on optimal quantum violation of non-contextual inequality | 3 |
| Rajeev Gangwar; IISER Mohali, India | Ancilla-Assisted Protection of Information: Application to Atom-Cavity Systems | 4 |
| Rakesh Kumar Saini; Macquarie University, Australia | Distance from Incompleteness | 5 |
| Ram Krishna Patra; S.N. Bose National Centre for Basic Sciences, India | Principle of Information Causality Rationalizes Quantum Composition | 6 |
| Ramadas N; IIT Madras, India | Equivalence of absolutely maximally entangled states and infinite quantum solutions to the problem of 36 officers of Euler | 7 |
| Ramniwas Meena; IIT Jodhpur, India | Characterization of quantumness of non-Gaussian states under the influence of Gaussian channel | 8 |
| Ranendu Adhikary; Indian Statistical Institute, Kolkata, India | Self-testing of true multipartite entangled states | 9 |
| Ritesh Kumar Singh; IIT Hyderabad, India | Robust Self-testing of multiparty GHZ state through the Svetlichny's inequality | 10 |
| Sachin Sonkar; IISER Mohali, India | Spin-based quantum Otto engines and majorization | 11 |
| Sagnik Ray; IISER Thiruvananthapuram, India | No Epistemic Explanation for Anti-Distinguishability of Quantum Mixed Preparations | 12 |
| Saheli Mukherjee; S.N. Bose National Centre for Basic Sciences, India | Interplay between the Hilbert-space dimension of the control system and the memory induced by quantum SWITCH | 13 |
| Sahil; The Institute of Mathematical Sciences, India | Uncertainty relations in pre- and post selected systems | 14 |
| Sahil Gopalkrishna Naik; S.N. Bose National Centre for Basic Sciences, India | Distilling Non locality in Quantum Correlations | 15 |
| Samrat Sen; S.N. Bose National Centre for Basic Sciences, India | Advantage of Hardy's nonlocal correlation in reverse zero-error channel coding | 16 |

ICPQIQC: 29 Jan – 02 Feb 2024

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| Santanu Sarkar; NIT Sikkim, India | Spread and asymmetry of typical quantum coherence and their inhibition in response to glassy disorder | 17 |
| Satyaki Manna; IISER Thiruvananthapuram, India | Unbounded quantum advantage in communication complexity based on distinguishability | 18 |
| Saumya Ranjan Behera; Raman Research Institute, India | A new tool towards satellite QKD | 19 |
| Saurabh U. Shringarpure; Seoul National University, South Korea | Pre-emptive error mitigation by measurement back action on bosonic multi-component cat codes | 20 |
| Shayeeef Murshid; Indian Statistical Institute, Kolkata, India | Unambiguous discrimination of sequences of quantum states: Local versus global measurements | 21 |
| Shibdas Roy; CQuERE, TCGCEST, India | Efficient learning of arbitrary single-copy quantum states | 22 |
| Shradhanjali Sahu; University of Leeds, UK | Finite-key Analysis for Continuous Variable Quantum Key Distribution in MIMO settings | 23 |
| Sneha Munshi; IIT Hyderabad, India | Self-testing of an unbounded number of mutually commuting local observables | 24 |
| Snehasish Roy Chowdhury; Indian Statistical Institute, Kolkata, India | Local Inaccessibility of Random Classical Information: Conditional Nonlocality demands Entanglement | 25 |
| Sohail; Harish Chandra Research Institute, India | Duality between quantum channels and super-channels is basis-dependent | 26 |
| Soham Sen; S.N. Bose National Centre for Basic Sciences, India | Entanglement degradation as a tool to detect signatures of quantum gravity | 27 |
| Soumen Mandal; S.N. Bose National Centre for Basic Sciences, India | Exploring Polarization Controlled Goos-Hänchen Shift by Quantum Weak Measurement | 28 |
| Soumik Mahanti, IISER Kolkata & SNBNCBS, India | Semi-device-independent certification of quantum memory | 29 |
| Soumyakanti Bose; Seoul National University, South Korea | Long-distance measurement-device-independent quantum key distribution using entangled states between continuous and discrete variables | 30 |
| Souradeep Sasmal; University of Electronic Science and Technology of China, China | Unbounded Sharing of Nonlocality Using Projective Measurements | 31 |
| Spiros Kechrimparis; Korea Institute for Advanced Study (KIAS) | Causal Asymmetry of Classical and Quantum Agents | 32 |
| Sravani Yanamandra; IIIT Hyderabad, India | Breaking Absolute Separability using Quantum Switch | 33 |
| Subhankar Bera; S.N. Bose National Centre for Basic Sciences, India | Device-Independent Quantum Key Distribution Using Random Quantum States | 34 |

ICPQIQC: 29 Jan – 02 Feb 2024

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| Subhendu Bikash Ghosh; Indian Statistical Institute, Kolkata, India | Quantum Nonlocality: Multi-copy Resource Inter-convertibility & Their Asymptotic Inequivalence | 35 |
| Sudipta Das; IIT Bombay, India | Sequential reattempt of telecloning | 36 |
| Surajit Sen; Guru Charan College, India | Entangled Qutrits in SU(3) Basis and Bell-Qutrit Inequality | 37 |
| Sutapa Saha; S.N. Bose National Centre for Basic Sciences, India | Bipartite polygon models: classes of entanglement and their nonlocal behaviour | 38 |
| Swapnil Bhowmick; Harish Chandra Research Institute, India | Necessary and sufficient criteria for violation of multi-settings Bell inequality | 39 |
| Swati Kumari; National Cheng Kung University, Tainan, Taiwan | Interplay of nonlocality and incompatibility breaking qubit channels | 40 |
| Tanya Sharma; Physical Research Laboratory, India | Mitigating the source side channel vulnerability by characterization of photon statistics | 41 |
| Tapaswini Patro; BITS Pilani Hyderabad Campus, India | Hidden non-n-locality in linear networks | 42 |
| Tathagata Gupta; Indian Statistical Institute, Kolkata, India | Unambiguous discrimination of sequences of quantum states: Local versus global measurements | 43 |
| Tudor-Alexandru Isdraila; Tamkang University, Taiwan | Evaluating cyclic translational symmetry in boson sampling systems with few detectors | 44 |
| Tushar Kanti Dey; Guru Charan College, India | Entangled Qutrits in SU(3) Basis and Qutrit Inequality | 45 |
| Varun Srivastava; Macquarie University, Australia | Non-Markovian multi-time processes with classical memory | 46 |