



ICQIF-2022 (online)

14th February, Monday (Day 1 of conference)



Inaugural Session (11:00 - 11:30)	
11:00 - 11:05	Welcome Address Preeti Parashar , Prof-in-Charge, PESD, ISI, Kolkata
11:05 - 11:10	Inaugural Address Sanghamitra Bandyopadhyay , Director, ISI, Kolkata
11:10 - 11:30	Organizers' Address Archan S. Majumdar
	Organizers' Address Guruprasad Kar
	Organizers' address Debasis Sarkar
	Organizers' address Somshubhro Bandyopadhyay
	Address Supratik Pal , Head, PAMU, ISI, Kolkata
Morning Session (11:30 - 13:00) Chair: Preeti Parashar	
11:30 - 12:20	Howard M. Wiseman :: Griffith University, Australia Can a qubit be your friend? Why experimental metaphysics needs a quantum computer
12:20 - 13:00	Aditi Sen De :: HRI, India Quantum Thermal Machines
Lunch Break (13:00 - 14:00)	
Afternoon Session (14:00 - 16:20) Chair: Archan S. Majumdar	
14:00 - 14:50	Shasanka Mohan Roy :: TIFR, India Rigorous quantum limits on monitoring higher order photon quadratures
14:50 - 15:40	Reinhard F. Werner :: ITP Hannover, Germany Quantum Correlations in the Minimal Scenario
15:40 - 16:20	Giulio Chiribella :: U of Hong Kong, Hong Kong Quantum and Classical Data Transmission Assisted by Indefinite Causal Order
Tea Break (16:20 - 16:50)	
Evening Session (16:50 - 19:00) Chair: Marcus Huber	
16:50 - 17:40	Maciej Lewenstein :: ICFO, Spain The Coming Decades of Quantum Simulation
17:40 - 18:20	Alexander Streltsov :: CeNT, Poland Catalytic Transformations of Pure Entangled States
18:20 - 19:00	Otfried Gühne :: U of Siegen, Germany Characterizing Quantum Correlations with Randomized Measurements
End of Day 1	

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ICQIF-2022 (online)

15th February, Tuesday (Day 2 of conference)



Morning Session (11:00 - 13:00) Chair: Anirban Pathak	
11:00 – 11:40	Prasanta K. Panigrahi :: IISER Kolkata, India Multi-party entanglement: A geometric perspective
11:40 – 12:00	Amit Mukherjee :: SNBNCBS, India Multiparty orthogonal product states with minimal genuine nonlocality
12:00 – 12:20	Arkabrabha Ghoshal :: Bose Institute, India Characterizing qubit channels in the context of quantum teleportation
12:20 – 12:40	Soumya Das :: ISI Kolkata, India Maximum violation of monogamy of entanglement for indistinguishable particles by measures that are monogamous for distinguishable particles
12:40 – 13:00	Atanu Bhunia :: U of Calcutta, India Nonlocality without entanglement: An acyclic configuration
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 15:40) Chair: Prasanta K. Panigrahi	
14:00 – 14:30	Ashutosh Rai :: KAIST, Republic of Korea Self-testing Quantum States via Non-maximal Bell Violation
14:30 – 15:00	Manik Banik :: IISER TVM, India Classical superdense coding and communication advantage of a single quantum
15:00 – 15:40	Cyril Branciard :: Institut Néel, France Quantum processes with indefinite causal order : demonstrating causal nonseparability with relaxed assumptions
Tea Break (15:40 – 16:10)	
Evening Session (16:10 – 17:40) Chair: Guruprasad Kar	
16:10 – 17:00	Tomasz Paterek :: U of Gdańsk, Poland Entangling life to external world
17:00 – 17:40	Flavio del Santo :: IQOQI, Austria Fundamental indeterminism in classical mechanics and special relativity
Tea Break (17:40 – 18:10)	
Late Evening Session (18:10 – 19:50) Chair: Alok Kumar Pan	
18:10 -18:30	Ali Ahanj :: Khayyam University, Iran Three-Spin Systems and the Pusey-Barrett- Rudolph (PBR) Theorem
18:30 -18:50	Martin Plávala :: Universität Siegen, Germany Operational Theories in Phase Space: Toy Model for the Harmonic Oscillator
18:50 -19:10	Tanmay Singal :: Nicolaus Copernicus University, Poland Approximate 3-designs and partial decomposition of the Clifford group representation using transvections
19:10 -19:30	Jonte R Hance :: University of Bristol, UK Does the Weak Trace Show the Past of a Quantum Particle?
19:30 -19:50	Ritajit Majumdar :: ISI Kolkata, India Optimizing Ansatz Design in QAOA for Max-cut
End of Day 2	

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ICQIF-2022 (online)

16th February, Wednesday (Day 3 of conference)



Morning Session (11:00 - 13:00) Chair: Tabish Qureshi	
11:00 – 11:40	A. R. Usha Devi :: Bangalore University, India Heat exchange and fluctuation in Gaussian thermal states -- Wigner function approach
11:40 – 12:00	Tanumoy Pramanik :: Institute of Physics, India Physical interpretation of nonlocal quantum correlation through local description of subsystems
12:00 – 12:20	Asmita Kumari :: HRI, India Luders bounds of Leggett-Garg inequalities, quantum channel, PT symmetric evolution and arrow-of-time
12:20 – 12:40	Sagnik Dutta :: IISER Kolkata, India Operational Characterization of Multipartite Nonlocal Correlations
12:40 – 13:00	Amit Kundu :: U of Calcutta, India Nonlocality in Quantum Network scenario
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 15:00) Chair: A. R. Usha Devi	
14:00 – 14:30	Prabha Mandayam :: IIT Madras, India On Optimal Cloning and Incompatibility
14:30 – 15:00	Samyadeb Bhattacharya :: IIIT Hyderabad, India Detecting Multipartite entanglement by harnessing non-Markovianity
Tea Break (15:00 – 15:30)	
Evening Session (15:30 – 18:00) Chair: Sougato Bose	
15:30 – 16:20	Vlatko Vedral :: U of Oxford, UK All quantum phases are acquired locally
16:20 – 17:10	Miguel Navascues :: IQOQI, Austria The world is not real
17:10 – 18:00	Stefano Mancini :: U of Camerino, Italy Quantum capacities of bosonic dephasing channel
Tea Break (18:00 – 18:30)	
Late Evening Session (18:30 – 19:50) Chair: Manik Banik	
18:30 -18:50	Wojciech Słomczyński :: Jagiellonian University, Poland Morphophoric measurements and Ugleichung in self-dual Generalized Probabilistic Theories
18:50 -19:10	Shubhayan Sarkar :: Center for Theoretical Physics, Poland Self-testing of any pure entangled state with minimal number of measurements and optimal randomness certification in one-sided device-independent scenario
19:10 -19:30	Anubhav Chaturvedi :: ICTQT, Poland Quantum description of reality is empirically incomplete
19:30 -19:50	Ibukunoluwa Adebimpe Adisa :: Creighton University, USA Implementing quantum gates using length-3 dynamic quantum walks
End of Day 3	

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ICQIF-2022 (online)

17th February, Thursday (Day 4 of conference)



Morning Session (11:00 - 13:00) Chair: Arul Lakshminarayan	
11:00 – 11:40	Apoorva D. Patel :: IISc Bangalore, India Software simulator for noisy quantum circuits
11:40 – 12:00	Sutapa Saha :: ISI Kolkata, India Quantum theory is exclusive: a distributed computing setup
12:00 – 12:20	Saptarshi Roy :: U of Hong Kong, Hong Kong Gain in Performance of Quantum Teleportation with Uniformity-breaking Distributions
12:20 – 12:40	Vaisakh Mannalath :: IIIT, India Bounds on semi-device-independent quantum random number expansion
12:40 – 13:00	Ram Krishna Patra :: IISER TVM, India Mutually Unbiased Balanced Functions & Generalized Random Access Codes
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 15:40) Chair: Anil Shaji	
14:00 – 14:30	Sai Vinjanampathy :: IIT Bombay, India Algorithmic Primitives for Quantum-Assisted Quantum Control
14:30 – 15:10	Sibasish Ghosh :: IISc, India Quantum homogenization in non-Markovian collisional model
15:10 – 15:40	Satyabrata Adhikari :: Delhi Technological University, India Graph theoretical approach to detect the $d_1 \otimes d_2$ dimensional bipartite entangled system
Tea Break (15:40 – 16:10)	
Evening Session (16:10 – 17:50) Chair: Alexander Streltsov	
16:10 – 17:00	Anna Sanpera :: UAB, Spain The volume of parent Hamiltonians
17:00 – 17:50	Sougato Bose :: UCL, UK Challenges for detecting the quantum nature of gravity
Tea Break (17:50 – 18:20)	
Late Evening Session (18:20 – 20:50) Chair: Somshubhro Bandyopadhyay	
18:20 -19:10	Antonio Acin :: ICFO, Spain Network quantum information processing
19:10 -20:00	Christopher A. Fuchs :: U of Massachusetts Boston, USA Quantum mechanics? It's all fun and games until someone loses an i
20:00 – 20:50	Gilad Gour :: U of Calgary, Canada From Static to Dynamic Divergences

End of Day 4

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ICQIF-2022 (online)

18th February, Friday (Day 5 of conference)



Morning Session (11:00 - 13:00) Chair: Indranil Chakrabarty	
11:00 – 11:40	Subhashish Banerjee :: IIT Jodhpur, India Quantum Speed Limit and Non-Markovian Physics
11:40 – 12:00	Neha Pathania :: Jamia Millia Islamia, India Quantifying Entanglement with Coherence
12:00 – 12:20	Priyabrata Char :: U of Calcutta, India Catalytic Transformations in Coherence Theory
12:20 – 12:40	Brij Mohan :: HRI, India Quantum speed limits for information and coherence
12:40 – 13:00	Rajni Bala :: IIT Delhi, India Layered semi-quantum key distribution & secret sharing
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 15:50) Chair: Debabrata Goswami	
14:00 – 14:40	Urbasi Sinha :: RRI, India Revealing new facets in experimental quantum information processing with photons
14:40 – 15:20	R. Srikanth :: Poornaprajna Institute of Scientific Research, India Non-invertibility of maps and the quantum dynamical semigroup
15:20 – 15:50	S. Aravinda :: IIT Tirupati, India On the maximally entangled and entangling unitary operators and its role in constructing a quantum ergodic hierarchy
Tea Break (15:50 – 16:20)	
Evening Session (16:20 – 18:30) Chair: Tomasz Paterek	
16:20 – 17:10	Marek Żukowski :: U of Gdańsk, Poland Revisited: 1. Wave particle-complementarity for a single photon. 2. (Extended) Wigner's Friends.
17:10 – 17:50	Arun Kumar Pati :: HRI, India Quantum Speed Limits for Observables
17:50 – 18:30	Armin Tavakoli :: IQOQI, Austria Entanglement in quantum communications
Tea Break (18:30 – 19:00)	
Late Evening Session (19:00 – 20:40) Chair: Guruprasad Kar	
19:00 -19:50	Adán Cabello :: U de Sevilla, Spain What is new in quantum contextuality?
19:50 -20:40	Lucien Hardy :: Perimeter Institute, Canada Time symmetry in operational quantum theory
End of Day 5	

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ICQIF-2022 (online)

19th February, Saturday (Day 6 of conference)



Morning Session (11:00 - 13:00) Chair: Urbasi Sinha	
11:00 – 11:40	Ravindra Pratap Singh :: PRL, India Free-space quantum communication: Effect of atmospheric aerosols
11:40 – 12:00	Srishty Aggarwal :: IISc Bangalore, India Increased quantum speed limit in non-uniform magnetic field
12:00 – 12:20	Vimalesh Kumar Vimal :: IIT Kanpur, India Revival of Magnetization and Quantum correlations in Kitaev spin chain
12:20 – 12:40	V Muthumanimaran :: IIT Bombay, India Near-Deterministic Weak-Value Metrology via Collective non-Linearity
12:40 – 13:00	Arindam Mitra :: IMSc, India Layers of classicality in the compatibility of measurements
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 16:10) Chair: Ravindra Pratap Singh	
14:00 – 14:50	Peng Xue :: CSRC, China Non-Hermitian Quantum Walks and Topology
14:50 – 15:30	Debabrata Goswami :: IIT Kanpur, India Subtle interplay of thermal and nonlinear processes for spatiotemporal control: Towards an 'open' quantum environment
15:30 – 16:10	Rajamani Vijayaraghavan :: TIFR Mumbai, India A multi-modal quantum circuit with an integrated qubit mode and a measurement cavity mode
Tea Break (16:10 – 16:40)	
Evening Session (16:40 – 19:00) Chair: Indranil Chakrabarty	
16:40 – 17:00	Some Sankar Bhattacharya :: ICTQT, Poland Local Quantum State Marking
17:00 – 17:20	Suchetana Goswami :: CeNT, Poland Coherence in Quantum Computation
17:20 – 17:40	Tanmoy Biswas :: ICTQT, Poland Fluctuation-dissipation relations for thermodynamic distillation processes
17:40 – 18:00	Ananda Gopal Maity :: SBNCBS, India Supremacy of indefinite causal order in quantum communication
18:00 – 18:20	Stanislav Filatov :: University of Latvia, Latvia Ordering the processes with indefinite causal order
18:20 – 18:40	Seid Koudis :: University of Naples Federico II, Italy (Causal)-Activation of Complex Entanglement Structures in Quantum Networks
18:40 – 19:00	Arup Roy :: A B N Seal College, India Classical capacity of Quantum Channel: Still an emerging issue in Quantum Information
End of Day 6	

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ICQIF-2022 (online)

21st February, Monday (Day 7 of conference)



Morning Session (11:00 - 13:00)

Chair: Anirban Pathak

11:00 – 11:40	Pankaj Agrawal :: IOP, India Inferred-variance uncertainty relations and quantum entanglement
11:40 – 12:00	Debarshi Das :: SNBNCBS, India Robust certification of arbitrary outcome quantum measurements without using entanglement
12:00 – 12:20	A. V. S. Kameshwari :: VIT Tamil Nadu, India Role of entangling operators in Duopoly games
12:20 – 12:40	Chirag Srivastava :: HRI, India Recycled entanglement detection by arbitrarily many sequential and independent pairs of observers
12:40 – 13:00	Arun Kumar Das :: SNBNCBS, India Resource theoretic efficacy of a two qubit entangled state in a sequential network

Lunch Break (13:00 – 14:20)

Afternoon Session (14:20 – 16:10)

Chair: Debasis Sarkar

14:20 – 14:50	Alok Kumar Pan :: NIT Patna, India Network nonlocality for arbitrary input scenario
14:50 – 15:40	Karol Życzkowski :: Jagiellonian University, Poland Thirty-six entangled officers of Euler: quantum solution of a classically impossible problem
15:40 – 16:10	Ritabrata Sengupta :: IISER Berhampur, India A Szegő type theorem, distribution of symplectic eigenvalues, and its applications in for chains of Gaussian states

Tea Break (16:10 – 16:40)

Evening Session (16:40 – 19:10)

Chair: Aditi Sen De

16:40 – 17:30	Andreas Winter :: UAB, Spain Entropic proofs of Singleton bounds for entanglement-assisted error correcting codes
17:30 – 18:20	Barbara Kraus :: U of Innsbruck, Austria Protocols for testing and verifying quantum devices- theory and experiment
18:20 – 19:10	Marcus Huber :: IQOQI, Austria Landauer vs. Nernst: What is the True Cost of Cooling a Quantum System?

End of Day 7

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ICQIF-2022 (online)

22nd February, Tuesday (Day 8 of conference)



Morning Session (11:00 - 13:00)

Chair: **Subhashish Banerjee**

11:00 – 11:40	Anirban Pathak :: IIIT, India A random journey into the world of randomness
11:40 – 12:00	Anu Kumari :: Delhi Technological University, India Classification witness operator for the classification of different subclasses of three-qubit GHZ class.
12:00 – 12:20	Anandamay Das Bhowmik :: ISI Kolkata, India From no causal loop to absoluteness of cause: discarding the quantum NOT logic
12:20 – 12:40	Sohail :: HRI, India Convolution algebra of superoperators and nonseparability witnesses for quantum operations
12:40 – 13:00	Hari krishnan SV :: IISER TVM, India State space structure of tripartite quantum systems

Lunch Break (13:00 – 14:00)

Afternoon Session (14:00 – 16:10)

Chair: **Sibasish Ghosh**

14:00 – 14:50	Valerio Scarani :: CQT, Singapore Irreversibility as “irretrodictability”
14:50 – 15:40	Runyao Duan :: IQC Baidu Research, China Quantum Adiabatic Theorem Revisited
15:40 – 16:10	Indranil Chakrabarty :: IIIT Hyderabad, India Quantum Conditional Entropy: A Resource

Tea Break (16:10 – 16:20)

Evening Session (16:20 – 19:00)

Chair: **Ujjwal Sen**

16:20 – 17:10	Michał Horodecki :: U of Gdańsk, Poland Reconciliation of thermalization property and complete positivity of evolution of open systems
17:10 – 18:00	Jan Kolodyński :: CeNT, Poland Quantum metrology with imperfect measurements
18:00 – 18:20	Lorenzo Catani :: Technische Universitaet, Germany Why interference phenomena do not capture the essence of quantum theory
18:20 - 18:40	Tulja Varun Kondra :: CeNT, Poland Stochastic approximate state conversion for entanglement and general quantum resource theories
18:40 - 19:00	Javid Naikoo :: CeNT, Poland Multiparameter estimation perspective on EP sensing

End of Day 8

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ICQIF-2022 (online)

23rd February, Wednesday (Day 9 of conference)



Morning Session (11:00 - 13:00) Chair: Prabha Mandayam	
11:00 – 11:40	Tabish Qureshi :: Jamia Millia Islamia, India Coherence, Interference and Complementarity
11:40 – 12:00	Natasha Awasthi :: DIT University Dehradun, India Universal quantum uncertainty relations between non-ergodicity and loss of information
12:00 – 12:20	Debashis Saha :: SNBNCBS, India Unbounded advantage in communication complexity and semi-device independent quantum key distribution based on contextuality proofs
12:20 – 12:40	Mir Alimuddin :: IISER TVM, India Local Quantum Measurement Demands Type-Sensitive Information Principles for Global Correlations
12:40 – 13:00	Tathagata Gupta :: ISI Kolkata, India Genuine activation of strong quantum nonlocality
Lunch Break (13:00 – 14:00)	
Afternoon Session (14:00 – 15:50) Chair: Arul Lakshminarayan	
14:00 – 14:50	Masahito Hayashi :: Southern U of Science and Technology, China Estimation of quantum state and quantum channel
14:50 – 15:20	Naqueeb Ahmad Warsi :: ISI Kolkata, India A Quantum "OR" Bound with Application to Communication over Entanglement Assisted Compound Quantum Channel.
15:20 – 15:50	Saikat Ghosh :: IIT Kanpur, India Quantum coherence, synchronization and metrology with trapped spin-1 atoms
Tea Break (15:50 – 16:20)	
Evening Session (16:20 – 18:20) Chair: Sibasish Ghosh	
16:20 – 17:10	Nilanjana Datta :: U of Cambridge, UK Determining whether a quantum channel has positive quantum capacity
17:10 – 17:40	Manabendra Nath Bera :: IISER Mohali, India Bounding Quantum Advantages in Postselected Metrology
17:40 – 18:20	Anil Shaji :: IISER TVM, India Can a mixed state quantum computer use the computational resources of its environment also?
Tea Break (18:20 – 19:00)	
Late Evening Session (19:00 – 20:40) Chair: Guruprasad Kar	
19:00 -19:50	Robert W. Spekkens :: Perimeter Institute, Canada Quantum Foundations Meets Causal Inference
19:50 -20:40	Mark M. Wilde :: Louisiana State University, USA Rains relative entropy as a smallest computable entanglement monotone
End of Day 9	

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ICQIF-2022 (online)

24th February, Thursday (Day 10 of conference)



Morning Session (11:00 - 13:10) Chair: Alok Kumar Pan	
11:00 – 11:40	Arul Lakshminarayan :: IIT Madras, India Concrete constructions of dual unitary operators
11:40 – 12:10	Nirman Ganguly :: BITS-Pilani Hyderabad, India A-unital operations and their relation to quantum conditional entropy
12:10 – 12:30	Daniel Burgarth :: Macquarie University, Australia One bound to rule them all: from Adiabatic to Zeno
12:30 – 12:50	Md Manirul Ali :: Chennai Institute of Technology, India Dynamical Crossover from Markovian to Non-Markovian Dynamics in the Strong Coupling Regime
12:50 – 13:10	Alexander Hahn :: Macquarie University, Australia Unification of Random Dynamical Decoupling and the Quantum Zeno Effect
Lunch Break (13:10 – 14:10)	
Afternoon Session (14:10 – 16:10) Chair: Satyabrata Adhikari	
14:10 – 14:30	Tamal Guha :: U of Hong Kong, Hong Kong On composition of multipartite quantum systems: perspective from time-like paradigm
14:30 – 14:50	Sumit Nandi :: SNBNCBS, India Genuine multi-partite nonlocality by generalizing Wigner's approach
14:50 – 15:10	Tapaswini Patro :: BITS Pilani Hyderabad, India Absolute fully entangled fraction from spectrum
15:10 – 15:30	Moein Naseri :: CeNT, Poland Coherence Characterization of Macroscopic Quantumness
15:30 – 15:50	Bihalan Bhattacharya :: SNBNCBS, India Generating and detecting bound entanglement in two-qutrits using a family of indecomposable positive maps
15:50 – 16:10	Anindita Bera :: Nicolaus Copernicus University, Poland A class of Bell diagonal entanglement witnesses in $C^4 \otimes C^4$: optimization and the spanning property
Tea Break (16:10 – 16:40)	
Concluding Session (16:40 – 18:00) Chair: Archan S. Majumdar	
16:40 – 17:30	Martin B. Plenio :: Ulm University, Germany Applications of Resource Theories to Quantum Computation and Biomolecular Switches
17:30 – 18:00	Vote of Thanks by the Organizers
End of Conference	

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