**International Young Quantum Scientists' Meet 2024**

**16th-20th September 2024**

**6:00 PM to 9:00 PM IST**

| **Date** | **Time** | **Title of the talk** | **Speaker** |
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| **16/09/2024**  **Monday** | 6:00 PM - 6:05 PM | **Inauguration** | Welcome address by Prof. Anirban Pathak |
| 6:05 PM - 6:10 PM | Inauguration address1 |
| 6:10 PM - 6:15 PM | Inauguration address by  Chief Guest |
| **Session 1: Quantum Sensing; Session Chair: Dr. Sandeep Mishra** | | |
| 6:15 PM - 6:30 PM | Modular Quantum Many-Body Sensors | Chiranjib Mukhopadhyay, University of Electronic Science and Technology of China, Chengdu, China |
| 6:30 PM - 6:45 PM | Quantum-enhanced sensing via Stark localization transition | Xingjian He, University of Electronic Science and Technology of China, Chengdu, China |
| 6:45 PM - 7:00 PM | Probing quantum phase transition via quantum speed limit | M Suman, Indian Institute of Technology Tirupati, India |
| 7:00 PM - 7:15 PM | Conditions for separability in multiqubit systems with an accelerating qubit using a conditional entropy | Harsha Miriam Reji, Indian Institute of Technology Dharwad, India |
| 7:15 PM - 7:30 PM | Enhanced quantum sensing by capitalising on dynamical singularities. | Javid Naikoo, Adam Mickiewicz University, Poznań, Poland |
| **Session 2: Quantum Optics; Session Chair: TBA** | | |
| 7:45 PM - 8:00 PM | Quantum state engineering of mesoscopic optical fields using photon counting | Kishore Thapliyal, Palacký University, Olomouc, Czech Republic |
| 8:00 PM - 8:15 PM | Multi photon operated multimode squeezed vacuum states | Hemant Hegde, Indian Institute of Technology Dharwad, India |
| 8:15 PM - 8:30 PM | Efficient detection of non-classicality of continuous variable states using moments of Wigner function | Sudip Chakrabarathy, S. N. Bose National Centre for Basic Sciences, India, India |
| 8:30 PM - 8:45 PM | Nonlocal Locking of Observable Quantities: A Faithful Signature of Nonclassical Correlations | Ram Krishna Patra, S. N. Bose National Centre for Basic Sciences, India |
| 8:45 PM - 9:00 PM | Heralded generation of displaced qudits from quantum optical catalysis | Devibala E, School of Physics, Madurai Kamaraj University, Tamil Nadu, India |

**Day 2**

| **Date** | **Time** | **Event** | **Speaker** |
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| **17/09/2024**  **Tuesday** | **Session 1: Quantum algorithm; Session Chair: TBA** | | |
| 6:00 PM - 6:15 PM | Discretized Quantum Exhaustive Search for Variational Quantum Algorithms | Dekel Meirom, Technion - Israel Institute of Technology, Israel |
| 6:15 PM - 6:30 PM | Quantum image encryption algorithm based on 3D-BNM chaotic map | Vivek Verma, Indian Institute of Technology Roorkee, India |
| 6:30 PM - 6:45 PM | Quantum Architecture Search with Reinforcement Learning | Akash Kundu, University of Helsinki, Finland |
| 6:45 PM - 7:00 PM | Quest for optimal quantum resetting: protocols for a particle on a chain | Pallabi Chatterjee, Indian Institute of Technology Tirupati, India |
| 7:00 PM - 7:15 PM | TBA | Britant, CDAC Noida, India |
| 7:15 PM - 7:30 PM | Non-Equilibrium Dynamics of Many-Body Systems for Image Processing in Quantum Machine Learning | Ruiyang Zhou, University of Electronic Science and Technology of China, China |
| **Session 2: QRNG and Related Topics; Session Chair: Dr. Vaibhav Rawoot** | | |
| 7:45 PM - 8:00 PM | Evaluating Quantumness, Efficiency and Cost of Quantum Random Number Generators via Photon Statistics | Nirupam Basak, Indian Statistical Institute, Kolkata, India |
| 8:00 PM - 8:15 PM | Implementation of RQFT-QTRNG using Quantum Gates in the IBM Quantum Lab | Gururaja T.S.,SASTRA University, Thanjavur, Tamil Nadu, India |
| 8:15 PM - 8:30 PM | Super-Statistical Entropy: A New Tool for Quantifying Correlations in Quantum Systems | Ahmed Bessiri, Theoretical Physics Laboratory, Faculty of Physics, University of Bab-Ezzouar, Algeria |
| 8:30 PM - 8:45 PM | Generalized α-Observational Entropy and thermodynamic entropy production | Shivam Sinha, Indian Institute of Technology Tirupati, India |
| 8:45 PM - 9:00 PM | Certifying Quantumness in Open Systems Using Leggett-Garg Inequalities | Md Manirul Ali, Chennai Institute of Technology, Chennai, India |

**Day 3**

| **Date** | **Time** | **Event** | **Speaker** |
| --- | --- | --- | --- |
| **18/09/2024**  **Wednesday** | **Session 1: Quantum Information-1; Session Chair: TBA** | | |
| 6:00 PM - 6:15 PM | Unbounded Sharing of Nonlocality Using Qubit Projective Measurements | Souradeep Sasmal, IFFS, University of Electronic Science and Technology of China, Sichuan, Chengdu, China |
| 6:15 PM - 6:30 PM | Resource Analysis for Applications Involving Large-Scale Quantum Entanglement Distribution | Srikara S, University of Technology, Sydney, Australia |
| 6:30 PM - 6:45 PM | Unbounded quantum advantage in communication complexity measured by  distinguishability | Satyaki Manna, IISER TVM, India |
| 6:45 PM - 7:00 PM | Entanglement witnessing based on extracted work for three-level lasers | Talbu Khalid, Faculty of Applied Sciences Ait Melloul, Morocco |
| 7:00 PM - 7:15 PM | Computationally efficient method to characterize Noncontextual behavior | Soumyabrata Hazra, International Institute of Information Technology Hyderabad, India |
| 7:15 PM - 7:30 PM | Local-Data-Hiding and Causal Inseparability: Probing Indefinite Causal Structures with Cryptographic Primitives | Samrat Sen, S. N. Bose National Centre for Basic Sciences, India |
| 7:30 PM - 7:45 PM | Certifying quantum state and dimension via phase-space Bell tests for continuous variable systems | Arijit Dutta, JIIT Noida, India |
| **Session 2: Hybrid Quantum computing; Session Chair:** | | |
| 7:45 PM - 8:00 PM | Hash-Based Cryptographic Schemes for Post-Quantum IoT Security: XMSS, SPHINCS+, and LMS | Ikechukwu John Chukwu, Kadir Has University, Turkiye |
| 8:00 PM - 8:15 PM | Quantum Inspired Large Kronecker Product Decomposition for Universal Data Science, AI and ML Applications… | Akshay Patil, CDAC Pune, India |
| 8:15 PM - 8:30 PM | Quantum accelerators for enabling quantum computing on supercomputers | Abhishek Tiwari, CDAC Noida, India |
| 8:30 PM - 8:45 PM | Enhancing a Biometrics Security System : Integrating Traditional Soft Computing and Quantum Techniques | Raja Babu Jamatia, Shoolini University of Biotechnology and Management Sciences, India |
| 8:45 PM - 9:00 PM | Search on superconducting qubits | A R Bathri Narayanan, CBS, University of Mumbai, India |

**Day 4**

| **Date** | **Time** | **Event** | **Speaker** |
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| **19/09/2024**  **Thursday** | **Session 1: Quantum Communication; Session Chair: TBA** | | |
| 6:00 PM - 6:15 PM | Joint measurements on distant physical systems | Alejandro Pozas-Kerstjens, Université de Genève, Switzerland |
| 6:15 PM - 6:30 PM | Advantages and limitations of wavelength division multiplexing quantum key distribution | Indranil Maiti, Nicolaus Copernicus University, Torun, Poland |
| 6:30 PM - 6:45 PM | Modified Six State Cryptographic Protocol with Entangled Ancilla States | Rashi Jain, Delhi Technological University, India |
| 6:45 PM - 7:00 PM | Qline Architecture based Hierarchical Quantum Secret Sharing in Multi-Node Satellite Communication Networks | Chitra Shukla, University of Luxembourg |
| 7:00 PM - 7:15 PM | Proposal of a User-Authenticated Device-Independent Quantum Secure Direct Communication Protocol | Nayana Das, LTIMindtree, India |
| 7:15 PM - 7:30 PM | Quantum key distribution with small data block sizes | Vaisakh Mannalath, Vigo Quantum Communication Center, Universidad de Vigo, Spain |
| 7:30 PM - 7:45 PM | Quantum remote implementation of hidden or partially unknown operators | Satish, JIIT Noida, India |
| **Session 2: Quantum systems; Session Chair: Dr R K Gopal** | | |
| 7:45 PM - 8:00 PM | Irreversibility in an Optical Parametric Driven Optomechanical System | Collins Okon Edet, Institute of Engineering Mathematics, Universiti Malaysia Perlis, Malaysia |
| 8:00 PM - 8:15 PM | Coherent Manipulation of Electron spins of an Ensemble of Nitrogen vacancy defect centers in diamond | Anuvab Nandi, Indian Institute of Science Education and Research, Kolkata, India |
| 8:15 PM - 8:30 PM | TBA | Abishek Shukla, Hasselt University, Belgium |
| 8:30 PM - 8:45 PM | Plasmonic skyrmion quantum thermodynamics | Vipin, IIT(BHU) Varanasi, India |
| 8:45 PM - 9:00 PM | Ionisation of Rydberg atoms in plasma medium. | Satyam Prakash, University of Hyderabad, India |
| 9:00 PM - 9:15 PM | Time resolved superradiant enhancement of Unruh signal | Akhil Deswal, IISER Mohali, India |

**Day 5**

| **Date** | **Time** | **Event** | **Speaker** |
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| **20/09/2024**  **Friday** | **Session 1: Quantum Information-2; Session Chair: TBA** | | |
| 6:00 PM - 6:15 PM | Thermodynamic uncertainty relation in degenerate and nondegenerate maser heat engines | Varinder Singh, Korea Institute for Advanced Study, Korea |
| 6:15 PM - 6:30 PM | Ensemble-learning error mitigation for variational quantum shallow-circuit classifiers | Qingyu Li, University of Electronic Science and Technology of China, China |
| 6:30 PM - 6:45 PM | Emerging quantum ridges and dynamic patterns in diverse field landscapes | Atta ur Rahman, School of Physical Sciences, University of Chinese Acedamy of Sciences, Beijing China |
| 6:45 PM - 7:00 PM | Qubit-qutrit correlations dynamics influenced by joint resonator and correlated channel | Abbas Manan, Department of Physics, Abbottabad University of Science and Technology, Pakistan. |
| 7:00 PM - 7:15 PM | Physical realization of realignment criteria via Structural Physical Approximation | Shruti Aggarwal, Delhi Technological University, India |
| 7:15 PM - 7:30 PM | Approximate quantum error correction  for non-Markovian noise process | Debjyoti Biswas, IIT Madras, India |
| **Session 2: Other related areas of quantum technology; Session Chair: TBA** | | |
| 7:30 PM - 8:00 PM | Brillouin Optomechanics and its Applications | Harsh Rathee, Quantum Measurement Lab, Imperial College London, United Kingdom |
| 7:45 PM - 8:00 PM | Quantum analogue simulation of many-body supersymmetry in the XXZ model | Hrushikesh Sable, Virginia Tech, USA |
| 8:00 PM - 8:15 PM | Multipartite Entangling Power in Quantum Circuits | Gaurav Rudra Malik, Department of Physics, IIT(BHU), Varanasi, India |
| 8:15 PM - 8:30 PM | Quantum structure of primordial matter: The mysteries of the quantum foundations of the standard model of particle physics and beyond. | Ayush Kaushik, Chaudhary Charan Singh University, India |
| 8:30 PM - 8:45 PM | No epistemic model can explain anti-distinguishability of quantum mixed preparations | Sagnik Ray, IISER Thiruvananthapuram, India |
| 8:45 PM - 9:00 PM | Extrapolation of polaron properties to low phonon frequencies by Bayesian machine learning | Pranav Kairon, University of Illinois Urbana Champaign |