RQI-N 2025: Contributed talks (RT = Remote Talk)

Speaker

Title

	Monday Session F1 (before Coffee break)——————————
Sharmila Balamurugan	Reading off correlation of spacetime fluctuations from interferometric output
Davide Giordano Ario Al	tamura Probing Quantum Collapse with Rotational Dynamics (RT)
Debarshi Das	A New Experimental Proposal to Test the Nonclassicality of Gravity
Ohkyung Kwon	A multimodal probe for general holographic coherence of quantum space-time
	states on causal horizons
Hartmut Grote	An experiment to search for signatures of quantized space-time: QUEST (RT)
Karol Sajnok	Operator Ordering in Relativistic Quantization: A Case Study of Specific Heat in
	Rindler Space
	Monday Session C1 (before Coffee break)
Tobi Haas	Quantum features from classical entropies
Anjana Krishnan	Role of Derivative Coupling in the Study of Acceleration Radiation in Curved
	Spacetimes (RT)
Anirudh Gundhi	Decoherence due to vacuum fluctuations
Alex Matzkin	Wavepacket tunneling and causality: a relativistic QFT approach
Jiro Soda	Quantum entanglement among axions, photons, and gravitons from inflation
Tales Rick Perche	How Much Vacuum Entanglement is there between Two Finite Spacetime
	Regions?
	-Monday Session F1 (after Coffee break)
Emanuele Panella	Cosmological tests for hybrid classical-quantum gravity
Linda van Manen	Causal consistency requirements for gravity-induced entanglement in systems
	with internal energy
Navdeep Arya	Bridging Gravitational and Quantum Worlds Using Coherent Atom Arrays
Jerzy Paczos	Gravitational wave imprints on spontaneous emission
Marta Maria Marchese	Cascaded Optomechanical Sensing
Joshua Foo	Quantum signatures of proper time in optical atomic clocks
	Monday Session C1 (after Coffee break)———————————
Boris Ragula	Dynamic Localization of a Free Quantum Field
Marko Vojinovic	Conceptual differences between mechanics and field theory, including gravity
José Polo-Gómez	Causal maps in quantum field theory
Daniele Colosi	Quantum Scalar and Vector Evanescent Particles
Max Joseph Fahn	Gravitationally induced decoherence of scalar particles from field theory
Lorenzo Braccini	Probing Gravitationally Induced Entanglement via Dynamical Superpositions of
	Quantum Matter
	Tuesday Session F2 (before Coffee break)—————————
Ioannis Soranidis	Thermodynamic properties of regular black holes from pure gravity
Jonathan Barenboim	Evaporating regular black holes in 2D gravity
Jana Menšíková	New interpretation of the original charged BTZ black hole spacetime
Martin Bojowald	Relativistic implications of entropy and purity
Ladina Hausmann	What quantum foundations teach us about black holes
Marek Liška	Black hole thermodynamics probes the equivalence principle
	Tuesday Session C2 (before Coffee break)————————
Hiroki Takeda	Quantum decoherence of gravitational waves

Youka Kaku	Sudden Decoherence by Resonant Particle Excitation for Testing Gravity-Induced Entanglement
Eyuri Wakakuwa	Detecting post-Newtonian classical and quantum gravity via quantum clock Interferometry
Onur Hosten	Control, sensing and gravitational coupling of milligram pendulums: towards
	interfacing quantum and gravity
Kristian Toccacelo	Benchmarks for quantum communication via gravity
Achintya Sajeendran	Quantum dynamics of indefinite fields and spacetimes
Tuesdav	Session F2 (after Coffee break)
Sebastiano Tomasi	Entanglement entropy area law in dynamical and guantum-corrected black holes
Aurelian Isar	Quantum entanglement of two bosonic modes in de Sitter space
Álvaro Álvarez-Domínguez	Quantum fermion superradiance and vacuum ambiguities on charged black holes
Mohammed Alkhateeb	Computational Quantum field theory in curved spacetimes: Fermionic and
	bosonic pair creation in 1+1 dimensional black holes
Daniel Terno	How to lose information with black holes: an update
Bruno Micciola	Entanglement generation and distribution in QED processes
Tuosday	Sassian C2 (after Coffee break)
Kensuke Gallock Voshimura	Acceleration induced radiation from a gudit particle detector model
Alessio Lannoni	A novel approach to particle production via communication between quantum
	narticle detectors
Matheus Hrabowec Zambianco	The Twin Paradox in Quantum Field Theory
Dimitris Moustos	Quantum thermal machines in black hole spacetime
Dhill eMaitre	A Universal Quantum Computer From Relativistic Motion
Nicholas Eunai	Non perturbative modelling of quadratically coupled detectors in OET
Nicholas Fullai	
Wednesd	lay Session F3 (before Coffee break)——————————
Carla Ferradini	Cyclic quantum causal modelling with a graph separation theorem
Paolo Bertozzini	Modular Theory, Quantisation and Quantum Space-time (RT)
Daniel Braun	Quantifying Causal Influence in Quantum Mechanics
Marius Krumm	What process matrices tell us about quantum spacetime
Raghvendra Singh	Unified Covariant GUP and Momentum-Space Geometry (RT)
Andrea Smirne	Quantumness and memory effects in multi-time measurements
Wednesd	lay Session C3 (before Coffee break)————————
Haruna Katayama	Circular Unruh effect using coupled annular Josephson junctions at finite ambient temperatures
Francesco Del Porro	Tunneling method for Hawking radiation in analogue gravity
Leonardo Solidoro	Quasinormal Modes of a Dispersive, Confined Gravity Simulator
María Rosa Preciado-Rivas	Simulating a superposition of spacetimes with optical media
Maciej Jarema	Information in quantum field theory simulators: Thin-film superfluid helium
Vitor Barroso Silveira	Experimental progress on third-sound detectors in accelerated motion
Wedneso	lay Session F3 (after Coffee break)—————————
Samuel Fedida	Foundations of relational scalar quantum field theory
Ismael Lucas Paiva	Unitarity, nonunitarity, and choice of clock observable in the Page-Wootters
Michael Suleymanov	Relativity of Quantum Correlations: Invariant Quantities and Frame-Dependent
Fabio Maria Mele	Intersures Linking quantum error correction and gauge theory via quantum reference
	trames
Maximilian Lock	I nree lessons in temporal quantum reference frames: causality, unitarity and periodicity

Yasaman Yazdi	Statistical Fluctuations in the Causal Set-Continuum Correspondence
Wedi	nesday Session C3 (after Coffee break)———————
Cisco Gooding	Quantum Backaction in Analogue Spacetime
Adam Teixidó-Bonfill	Modelling entanglement harvesting implementations in
	superconducting circuits
Daniele Oriti	Gravitational dynamics in analogue systems: a proposal
Nicolas Menicucci	Tachyonic media in analogue models of special relativity
Lorenzo Maccone	Geometric Event-based relativistic quantum mechanics
Barbara Soda	Infinitesimal limit of teleportation
Frida	y Session F4 (before Coffee break)——————————
Luis C. Barbado	Particle detectors in superposition in de Sitter spacetime
Ireneo James Membrere	An analysis of entanglement harvesting beyond perturbation theory
Cameron Bunney	Ambient temperature versus ambient acceleration in the circular motion Unruh
	effect
Nicola Pranzini	Measurement-induced state updates in holography
Leo J A Parry	Field-state back-action from pointlike detectors
Sijia Wang	Harvesting Information Across the Horizon
Dipankar Barman	Can spacetime fluctuations generate entanglement between co-moving
	accelerated detectors? (RT)
Tomoya Hirotani	Relativistic quantum Otto heat engine using a three-level Unruh-DeWitt detector
Frida	y Session C4 (before Coffee break)
Evan Gale	The localization problem: an antinomy between measurability and causal dynamics
Shih-Yuin Lin	Quantum Larmor formula for uniformly accelerated charges
Jose de Ramon Rivera	Covariant non-perturbative pointer variables for quantum fields
Yuta Uenaga	Quantum Langevin equation for finite-time interactions
Maarten Grothus	Routing Quantum Control of Causal Order (RT)
Giacomo Rosati	Observers in relativistic quantum spacetime
Stanislaw Kurdzialek	Using adaptiveness and causal superpositions against noise in quantum metrology
Safae Tariq	Black Holes: Insights into Radiation Entropy