

QUANTUM SPEEDUP

November 20th-22nd, 2023, Gdańsk

Venue: University of Gdańsk, Kładki Street, 24, 80-822 Gdańsk

Programme

Monday, November 20th, 2023

16:30	Registration
18:00	Official opening
18:30	Welcome dinner

Tuesday, November 21st, 2023

9:30 Registration & Morning coffee

10:30 Organizational announcements

Tuesday SpeedTalk Sessions

10:35 – 11:00

SpeedTalks I

Tomasz Linowski (ICTQT, UG)	Seungbeom Chin (ICTQT, UG / SKKU)
Ekta Panwar (ICTQT, UG)	Piotr Mironowicz (US)
Anubhav Chaturvedi (ICTQT, UG / GUT)	Konrad Schlichtholz (ICTQT, UG)
Vinicius Rossi (ICTQT, UG)	Giuseppe Viola (ICTQT, UG)

Break & Discussion time

11:20 – 11:45

SpeedTalks II

Ankit Kumar (ICTQT, UG)	Matheus Eiji Ohno Bezerra (UF do ABC/ UW)
Pawel Halavach (QOT, UW)	Robert Okuła (GUT)
Bartosz Kasza (QOT, UW)	Otavio A. D. Molitor (ICTQT, UG)
Sumit Rout (ICTQT, UG)	Michał Banacki (ICTQT, UG)

Break & Discussion time

12:05 – 12:30

SpeedTalks III

Marcin Pawłowski (ICTQT, UG)	Borhan Ahmadi (ICTQT, UG)
Marcin Jarzyna (QOT, UW)	Nitica Sakharwade (ICTQT, UG)
Alejandro Jenkins (ICTQT, UG)	Karol Horodecki (ICTQT / IFTiA, UG)
Marcin Markiewicz (ICTQT, UG)	Rishav Sagar (ICTQT, UG)

Lunch Break

15:00 – 17:30

Tuesday Poster Session

Wednesday, November 22nd, 2023											
9:30	Registration & Morning coffee										
10:30	Organizational announcements										
	Wednesday SpeedTalk Sessions										
10:35 – 11:00	SpeedTalks IV										
	<table border="1"> <tr> <td>Marek Winczewski (ICTQT, UG)</td> <td>Crislane de Brito (WFAiIS, NCU)</td> </tr> <tr> <td>Wojciech Bruzda (CFT PAN)</td> <td>Giovanni Scala (ICTQT, UG)</td> </tr> <tr> <td>Marcin Wieśniak (ICTQT / IFTiA, UG)</td> <td>Some Sankar Bhattacharya (ICTQT, UG)</td> </tr> <tr> <td>Marcin Łobejko (ICTQT / IFTiA, UG)</td> <td>Fattah Sakuldee (ICTQT, UG)</td> </tr> </table>	Marek Winczewski (ICTQT, UG)	Crislane de Brito (WFAiIS, NCU)	Wojciech Bruzda (CFT PAN)	Giovanni Scala (ICTQT, UG)	Marcin Wieśniak (ICTQT / IFTiA, UG)	Some Sankar Bhattacharya (ICTQT, UG)	Marcin Łobejko (ICTQT / IFTiA, UG)	Fattah Sakuldee (ICTQT, UG)		
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	Break & Discussion time										
11:20 – 11:50	SpeedTalks V										
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Marcin Karczewski (ICTQT, UG)	Last minute speedtalk!										
Alexandre Orthey (CFT PAN)	Last minute speedtalk!										
11:50	Group photo										
	Lunch Break										
14:30 – 17:00	Wednesday Poster Session										
17:00	Closing remarks										

List of speed talks / poster sessions

Tuesday Sessions	
Tomasz Linowski (ICTQT, UG)	Dissipative evolution of quantum Gaussian states
Ekta Panwar (ICTQT, UG)	Robust self-testing of Bell inequalities tilted for maximal loophole-free nonlocality
Anubhav Chaturvedi (ICTQT, UG / GUT)	Extending loophole-free nonlocal correlations to arbitrarily large distances
Vinicius Rossi (ICTQT, UG)	A linear program for testing nonclassicality, its implementation and an application
Seungbeom Chin (ICTQT, UG / SKKU)	Graph Picture for the Heralded Non-Destructive Generation of Bosonic N-partite Entanglement
Piotr Mironowicz (US)	Experimental certification of more than one bit of quantum randomness in the two inputs and two outputs scenario
Konrad Schlichtholz (ICTQT, UG)	Single-photon based Quantum Key Distribution secure against no-signaling eavesdropping
Giuseppe Viola (ICTQT, UG)	Quantum Advantage for Rendezvous and Domination Tasks on Graphs with Mobile Agents
Ankit Kumar (ICTQT, UG)	Probing Modified Gravity with Entanglement of Microspheres
Paweł Halavach (QOT, UW)	Construction of diode laser system with generation of pulses for optical-microwave converter
Bartosz Kasza (QOT, UW)	Simultaneous estimation of loss and phase delay in quantum optical interferometry

Sumit Rout (ICTQT, UG)	A Novel Instance of Unbounded Quantum Advantage
Matheus Eiji Ohno Bezerra (UF do ABC / UW)	Families of bosonic suppression laws beyond the permutation symmetry principle
Robert Okuła (GUT)	How decoherence impact the security of BB84
Otávio A. D. Molitor (ICTQT, UG)	Salient signatures of entanglement in the surrounding environment
Michał Banacki (ICTQT, UG)	On steering in the C*-algebraic framework
Marcin Pawłowski (ICTQT, UG)	New paradigms for device independent security
Marcin Jarzyna (QOT, UW)	Signal amplification in quantum key distribution
Alejandro Jenkins (ICTQT, UG)	The Josephson junction as a quantum engine
Marcin Markiewicz (ICTQT, UG)	Generalization of Gisin's Theorem to Quantum Fields
Borhan Ahmadi (ICTQT, UG)	Non-reciprocal Quantum Batteries
Nitica Sakharwade (ICTQT, UG)	How can models of Indefinite Causality be understood within the Causaloid Framework
Karol Horodecki (ICTQT / IFTiA, UG)	The rank of contextuality
Rishav Sagar (ICTQT, UG)	Fluctuation in Quantum Critical Heat Engine

Wednesday Sessions

Marek Winczewski (ICTQT, UG)	V-type Open Quantum System Driven by Incoherent Light in Transient Regime
Wojciech Bruzda (CFT PAN)	Two-Unitary Complex Hadamard Matrices
Marcin Wieśniak (ICTQT / IFTiA, UG)	Multiparty entanglement or multiparticle entanglement
Marcin Łobejko (ICTQT / IFTiA, UG)	Beating the Otto efficiency with a two-stroke engine assisted by a catalyst
Crislane de Brito (NCU)	Quantum Oct sensing with OAM-entangled light
Giovanni Scala (ICTQT, UG)	Revisiting Hyperbit Limitations unveils Quantum Communication Advantages
Some Sankar Bhattacharya (ICTQT, UG)	Local Inaccessibility of Random Classical Information & Entanglement
Fattah Sakuldee (ICTQT, UG)	On the Applications of Noise Decoupling Principle in Continuous Variable Systems
Pedro Dieguez (ICTQT, UG)	Unveiling quantum complementarity trade-offs in relativistic scenarios
Roberto Dobal Baldijão (ICTQT, UG)	Can multiple observers detect KS-contextuality?
Andre Hernandes Alves Malavazi (ICTQT, UG)	Modeling quantum thermal devices
Marcin Karczewski (ICTQT, UG)	Generation of totally antisymmetric states

Alexandre Orthey (CFT PAN)	Semi Device-Independent Certification of Generalized Measurements
Susane Calegari (CFT PAN)	Contextuality (and Pfaffian graphs) for Majorana Fermions
Paweł Mazurek (ICTQT, UG)	Waveguide-assisted Quantum Batteries
Akshata Shenoy (ICTQT, UG)	Steering enabled quantum metrology

Acronyms

UG – University of Gdańsk

ICTQT – International Centre for Theory of Quantum Technologies

IFTiA – Institute of Theoretical Physics and Astrophysics

WMFiI - Department of Mathematics, Physics and Informatics

UW – University of Warsaw

QOT – Centre for Quantum Optical Technologies, Centre of New Technologies

NCU - Nicolaus Copernicus University in Toruń

WFAiIS - Faculty of Physics, Astronomy and Informatics

CFT PAN – Center for Theoretical Physics, Polish Academy of Sciences

KCIK – National Quantum Information Centre

SKKU – Sungkyunkwan University, South Korea

UF do ABC - Universidade Federal do ABC, Brazil

US - University of Stockholm, Sweden

Committees

Advisory Committee

Konrad Banaszek (QOT, UW)

Marek Kuś (CFT, PAN)

Marcin Marciniak (WMFiI, UG)

Marek Żukowski (ICTQT, UG)

Karol Życzkowski (KCIK, UG)

Steering & Organising Committee

Marcin Górzny (ICTQT, UG)

Paweł Horodecki (ICTQT, UG)

Ewa Kaszewska (ICTQT, UG)

Marta Krzyżykowska (ICTQT, UG)

Michał Parniak (QOT, UW)

