



XV Symposium KCIK-ICTQT on  
**QUANTUM INFORMATION**  
16-18 May 2024, Sopot, Poland

## PROGRAMME

**Venue:** Faculty of Economics, University of Gdańsk, Armii Krajowej 119, Sopot (Building C, Hall D)

### Thursday, May 16

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<b>08:30 – 09:00</b>	<b>Registration</b>	
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<b>09:00 – 09:10</b>	<b>Opening ceremony</b>	
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<b>Session I</b>	Chair:	
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09:10 – 09:35	<b>Charles Bennett</b>	<i>How Science, and Scientists individually, can stabilize democracies against misinformation-driven discord and disintegration</i>
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09:35 – 10:00	<b>Lorenzo Maccone</b>	<i>Mutual Information Bounded by Fisher Information</i>
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10:00 – 10:25	<b>Felix Leditzky</b>	<i>Enhancing classical communication networks with quantum resources</i>
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<i>Coffee break – 40 min</i>		
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<b>Session II</b>	Chair:	
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11:05 – 11:30	<b>Christiane P. Koch</b>	<i>Minimizing resources for quantum devices with control theory</i>
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11:30 – 11:55	<b>Paweł Caban</b>	<i>Entanglement and Bell violation in <math>H</math> to <math>ZZ</math> decay with anomalous coupling</i>
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11:55 – 12:20	<b>Marcin Płodzień</b>	<i>Generation and storage of many-body quantum correlations in analog and digital quantum simulators</i>
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<i>Lunch – 100 min</i>		
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<b>Session III</b>	Chair:	
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14:00 – 14:25	<b>Volodymyr Tkachuk</b>	<i>Simulation of spin systems with quantum computers</i>
14:25 – 14:50	<b>Tomasz Śmierzchalski</b>	<i>AI-Powered Error Correction for Quantum Annealers</i>
14:50 – 15:15	<b>Piotr Kolenderski</b>	<i>Quantum technologies based on single photons</i>
15:15 – 15.20	<b>Final remarks</b>	
<i>Coffee break – 40 min</i>		
<b>Special Evening Session</b> Chair:		
16:00 – 16:15	<b>Distinguished PhD Thesis 2023</b>	
16:15 – 16:40	<b>Silver KCIK Award 2023</b>	
16:40 –	<b>Charles Bennett</b>	<i>Evening lecture on the early history of quantum information</i>
19:00 -	<b>Dinner speeches</b>	Conference dinner (Restaurant "Nad Potokiem", ul. Morska 4, Gdańsk - Jelitkowo)

## Friday, May 17

<b>Session V</b>	Chair:	
09:20 – 09:45	<b>Lev Vaidman</b>	<i>An update on counterfactual communication</i>
09:45 – 10:10	<b>Marco Genovese</b>	<i>New perspectives in quantum imaging: quantum-enhanced quantitative phase imaging</i>
10:10 – 10:35	<b>Rafał Demkowicz-Dobrzański</b>	<i>Quantum metrology using quantum combs and tensor network formalism</i>
10:35 – 11:00	<b>Artur Barasiński</b>	<i>Quantification of Quantum Correlations in Gaussian States Using Photon-Number Measurements</i>
<i>Coffee break – 40 min</i>		
<b>Session VI</b>	Chair:	
11:40 – 12:05	<b>Jukka Pekola</b>	<i>Trajectory-based detection in stochastic and quantum thermodynamics</i>
12:05 – 12:30	<b>Hermann Kampermann</b>	<i>Tight finite secret key rates for the six state protocol</i>
12:30 – 12:55	<b>Paweł Kurzyński</b>	<i>Exposing Hypersensitivity in Quantum Chaotic Dynamics</i>
12:55 – 13:20	<b>Alexandre Orthey</b>	<i>Progress on device-independent and almost device-independent schemes of certification of quantum states and measurements</i>
<b>Conference photo</b>		
<i>Lunch – 100 min (including the photo)</i>		
<b>Session VII</b>	Chair:	
15:00 – 15:25	<b>Khrystyna Gnatenko</b>	<i>Studies of the properties of weighted and directed graphs on a quantum computer</i>
15:25 – 15:50	<b>Aleksander Lasek</b>	<i>Non-Abelian symmetry can increase entanglement entropy</i>
15:50 – 16:15	<b>Pradeep Kiran Sarvepalli</b>	<i>Quantum communication complexity of secret sharing: An emerging direction</i>
16:15 – 16:40	<b>Piotr Mironowicz</b>	<i>Entanglement Assisted Collaboration</i>

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16:40 – 16.50 **Final remarks**

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17:00 – 19:00 **Poster session**

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## Saturday, May 18

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**Session VIII** Chair:

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09:20 – 9:45 **Oriol Romero-Isart** *Levitated Nanoparticles in Macroscopic Quantum Superpositions: Pushing the Boundaries of Quantum Mechanics*

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09:45 – 10:10 **Paweł Machnikowski** *Controlling photons with acoustic fields using a solid-state quantum emitter*

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10:10 – 10:35 **Vahid Karimipour** *The noisy Werner-Holevo channel and its properties*

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10:35 – 11:00 **Marek Sawerwain** *On the use of Fredholm determinants to analysis the entropy of quantum infinite-dimensional systems*

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*Coffee break – 40 min*

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**Session IX** Chair:

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11:40 – 12:05 **Akshata Shenoy** *Quantum machine learning powered quantitative finance*

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12:05 – 12:30 **Piotr Szańkowski** *Phenomenological Quantum Mechanics: deducing the formalism from experimental observations*

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12:30 – 12:55 **Jakub Czartowski** *Iso-entangled Measurements: Uncharted Territory in Quantum Entanglement*

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12:55 – 13:00 **Final remarks**

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*Lunch – 90 min*

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14:30 – 16:00 Meeting of the KCIK Scientific Council

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## Organizers

