

# QUANTUM OPTICS X

September 5-11, 2021

Toruń Time (GMT+2)	Monday, 6th	Tuesday, 7th	Wednesday, 8th	Thursday, 9th	Friday, 10th					
8:55-9:00	<b>CONFERENCE OPENING</b>									
09:00 - 09:40	<b>Session A1</b> chair: S. Jochim	Jean Dalibard*	<b>Session B1</b> C. de Morais Smith	Sabrina Maniscalco	<b>Session C1</b> chair: K. Pachucki	Christian Gross	<b>Session D1</b> chair: P. Milman	Ian A. Walmsley*	<b>Session E1</b> chair: R. Alicki	Anna Sanpera*
09:40 - 10:20		Tilman Pfau*		Robert Alicki		Denis Vasilyev*		Michał Parniak		Bogdan Damski*
10:20 - 10:40		Giacomo Roati		Piotr Sierant*		Christian Marciniak*		Jan Kołodyński		Kamil Korzekwa
10:40 - 11:00		Zwettler Timo		Klaus Ziegler*		Matteo Rosati		Javier Argüello-Luengo		Soumik Bandyopadhyay*
	COFFEE	COFFEE	COFFEE	COFFEE	COFFEE					
11:30 - 12:10	<b>Session A2</b> K. Rzażewski	C. de Morais Smith	<b>Session B2</b> M. Lewenstein	Francesca Ferlaino*	<b>Session C2</b> M. Matuszewski	Misha Ivanov	<b>Session D2</b> S. Maniscalco	Perola Milman	<b>Session E2</b> chair: M. Ivanov	Christine Silberhorn*
12:10 - 12:50		Michał Matuszewski		Florian Schreck*		Sara Ducci*		Krzysztof Sacha		Anne L'Huiller*
12:50 - 13:10		Dąbrowka Biegańska*		Selim Jochim		Bianka Woloncewicz		Lorenzo Maccone		Radim Filip*
13:10 - 13:30	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK					
15:00 - 15:40	<b>Session A3</b> chair: C. Gross	Tanya Zelevinsky*	TORUŃ SIGHTSEEING TOUR 15:00-17:10	<b>Session C3</b> chair: K. Sacha	Dmitry Budker*	<b>Session D3</b> L. Maccone	Eleni Diamanti*	<b>Session E3</b> E. Losero	Liang Jiang*	
15:40 - 16:20		Karolina Słowik			Krzysztof Pachucki		Fernando Brandao*		Mohamed Bourennane*	
16:20 - 16:40		Anna Dawid-Łękowska			Piotr Wcisło		Pieter Kok*		Ulysse Chabaud*	
	COFFEE	COFFEE	COFFEE	COFFEE	COFFEE					
17:10 - 17:30	<b>Session A4</b> chair: P. Wcisło	Jun Ye*	<b>ANNIVERSARY SCIENTIFIC SESSION</b>  K. Rzażewski M. Raymer* M. Lewenstein B. Englert  * chair: J. Mostowski	<b>Session C4</b> J. Kołodyński	Remigiusz Augusiak*	<b>D4</b> M. Gajda	David Clement*	<b>E4</b> K. Słowik	Piotr Kolenderski	
17:30 - 17:50		Philip Gregory*			Michał Ozmaniec		Hélène Perrin		Elena Losero	
17:50 - 18:10		ONLINE POSTERS FLASH TALKS A			Alejandro Gonzalez-Tudela*		Daniel Goncalves-Romeu		Pau Farrera*	
18:10 - 18:30		ONLINE POSTERS FLASH TALKS C							<b>CONFERENCE CLOSING</b>	
20:00-	POSTER SESSION A  + BUFFET	POSTER SESSION B  + BUFFET	POSTER SESSION C  + BUFFET	CONFERENCE DINNER	*online participation					

# SUNDAY 5/09/2021

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15:00 - 19:00 Check-in and registration

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# MONDAY 6/09/2021

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8:00 - 9:00 Registration

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8:55 - 9:00 Opening

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9:00 - 11:00 **Session A1**

Chair: S. Jochim

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9:00 - 9:40 Jean Dalibard\*: Solitons in an atomic 2D gas: an illustration of scale invariance

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9:40 - 10:20 Tilman Pfau\*: Strong dipolar interactions in thermal vapor cells

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10:20 - 10:40 Giacomo Roati: Tunneling transport of strongly interacting Fermi gases across the superfluid transition

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10:40 - 11:00 Timo Zewtler: Cavity QED with a Strongly Interacting Fermi Gas

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11:00 - 11:30 Coffee break

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11:30 - 13:10 **Session A2**

Chair: K. Rzażewski

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11:30 - 12:10 C. de Morais Smith: Non-Hermitian quantum gases: a platform for imaginary time crystals

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12:10 - 12:50 Michał Matuszewski: Optical neural networks

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12:50 - 13:10 Dąbrowka Biegańska\*: Elementary excitations of exciton-polariton condensates in a synthetic gauge field

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13:10 - 15:00 Lunch break

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15:00 - 16:40 **Session A3**

Chair: C. Gross

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15:00 - 15:40 Tanya Zelevinsky\*: Metrology with ultracold molecules

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15:40 - 16:00 Karolina Słowik: Light interactions with polar quantum systems

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16:00 - 16:20 Anna Dawid-Łękowska: Magnetic and electric properties of ultracold molecular systems of increasing complexity

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16:20 - 16:40	Tilman Zibold: Observation of the Einstein-Podolsky-Rosen paradox between two Bose-Einstein condensates
16:40 - 17:10	Coffee break
17:10 - 18:30	<b>Session A4</b> Chair: P. Wcisło
17:10 - 17:50	<u>Jun Ye*</u> : Quantum matter, optics, and metrology
17:50 - 18:10	Philip Gregory*: Robust storage qubits in ultracold RbCs molecules
18:10 - 18:30	Online Posters Flash Talks A
20:00 - ...	Poster Session A with buffet

## TUESDAY 7/09/2021

9:00 - 11:00	<b>Session B1</b> Chair: C. de Morais Smith
9:00 - 9:40	<u>Sabrina Maniscalco</u> : Learning to measure: A new adaptive approach to extract information in quantum algorithms for near-term quantum computers.
9:40 - 10:20	<u>Robert Alicki</u> : Thermodynamics of lasing and related phenomena
10:20 - 10:40	Piotr Sierant*: POLFED - a new diagonalization approach to study non-equilibrium phenomena
10:40 - 11:00	Klaus Ziegler*: Probing the dynamics of many-body systems
11:00 - 11:30	Coffee break
11:30 - 13:10	<b>Session B2</b> Chair: M. Lewenstein
11:30 - 12:10	<u>Francesca Ferlaino*</u> : Supersolidity in the ultracold: when atoms behave as crystal and superfluid at the same time
12:10 - 12:50	<u>Florian Schreck*</u> : Continuous-wave BECs and superradiant clocks
12:50 - 13:30	<u>Selim Jochim</u> : Understanding many-body physics from correlations between ultracold atoms
13:30 - 15:00	Lunch break

15:00 - 17:00 Special Event: Toruń Sightseeing Tour

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17:00 - 17:10 Coffee break

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17:10 - 19:00 **Special Event: Anniversary Scientific Session**

chair: J. Mostowski

K. Rzażewski, M. Raymer\*, M. Lewenstein, B. Englert\*

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20:00 - ... Poster Session B with buffet

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## WEDNESDAY 8/09/2021

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9:00 - 11:00 **Session C1**

Chair: K. Pachucki

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9:00 - 9:40 Christian Gross: Designing interactions in tweezer arrays by Rydberg dressing

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9:40 - 10:20 Denis Vasilyev\*: Quantum Variational Optimization of Ramsey Interferometry and Atomic Clocks

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10:20 - 10:40 Christian Marciniak\*: Optimal metrology with variational quantum circuits on trapped ions

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10:40 - 11:00 Matteo Rosati: Communication under phase-noise and loss: beating photon-number and coherent signals with squeezing

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11:00 - 11:30 Coffee break

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11:30 - 13:10 **Session C2**

Chair: M. Matuszewski

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11:30 - 12:10 Misha Ivanov: Towards optically-driven topological electronics in two-dimensional materials

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12:10 - 12:50 Sara Ducci\*: Generation of quantum states of light in AlGaAs chips: engineering and applications

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12:50 - 13:10 Bianka Woloncewicz: Do You Believe in the Non-classicality of a Single Photon?

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13:10 - 15:00 Lunch break

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15:00 - 16:40 **Session C3**

Chair: K. Sacha

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15:00 - 15:40 Dmitry Budker\*: Sensing and NV (color centers in diamond)

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15:40 - 16:20 Krzysztof Pachucki: Precise atomic spectroscopy in search for unknown interactions

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16:20 - 16:40	<u>Piotr Wcisło</u> : Precision spectroscopy for studying molecular collisions and interactions
16:40 - 17:10	Coffee break
17:10 - 18:30	<b>Session C4</b> Chair: J. Kołodyński
17:10 - 17:30	<u>Remigiusz Augusiak*</u> : Self-testing within the stabilizer formalism
17:30 - 17:50	Michał Oszmaniec*: Fermion Sampling: a robust quantum computational advantage scheme using fermionic linear optics and magic input states
17:50 - 18:10	Alejandro Gonzalez-Tudela*: Topology meets quantum optics: individual and collective effects
18:10 - 18:30	Online Posters Flash Talks C
20:00 - ...	Poster Session C with buffet

## THURSDAY 09/09/2021

9:00 - 11:00	Session D1 Chair: P. Milman
9:00 - 9:40	<u>Ian A. Walmsley*</u> : Some perspectives on photon interference and measurement
9:40 - 10:20	<u>Michał Parniak</u> : Entanglement of a spin ensemble and a nanomechanical membrane created with light and quantum measurement
10:20 - 10:40	<u>Jan Kołodyński</u> : Quantum sensors: taming the two-stage architecture
10:40 - 11:00	Javier Argüello-Luengo: Reaching strong optomechanical coupling between a single photon and a single atom
11:00 - 11:30	Coffee break
11:30 - 13:10	<b>Session D2</b> Chair: S. Maniscalco
11:30 - 12:10	<u>Perola Milman</u> : Light and color: continuous variables quantum information using frequency
12:10 - 12:50	<u>Krzysztof Sacha</u> : Time Crystal Phenomena
12:50 - 13:10	Lorenzo Maccone: Quantum measurements of time

13:10 - 15:00 Lunch break

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15:00 - 16:40 **Session D3**

Chair: L. Maccone

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15:00 - 15:40 Eleni Diamanti\*: Secure communications in quantum networks

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15:40 - 16:20 Fernando Brandao: Bulding a quantum computer with cat codes

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16:20 - 16:40 Pieter Kok\*: Tight bounds on the simultaneous estimation of incompatible parameters

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16:40 - 17:10 Coffee break

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17:10 - 18:30 **Session D4**

Chair: M. Gajda

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17:10 - 17:30 David Clement\*: Observation of pairs of atoms with opposite momenta in the quantum depletion of interacting Bose gases

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17:30 - 17:50 H el ene Perrin: Supersonic rotation of a superfluid: a long-lived dynamical ring

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17:50 - 18:10 Daniel Goncalves-Romeu: Quantum nonlinear optics based on 2D Rydberg atom arrays

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20:00 - ... **Special Event: Conference Dinner**

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# FRIDAY 10/09/2021

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9:00 - 11:00      **Session E1**

Chair: R. Alicki

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9:00 - 9:40      Anna Sanpera\*: Why finite baths are important in open quantum systems

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9:40 - 10:20    Bogdan Damski\*: Phase transitions of quantum simulators via (non)equilibrium susceptibilities

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10:20 - 10:40    Kamil Korzekwa: Fundamental Constraints of Quantum Thermodynamics in the Markovian Regime

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10:40 - 11:00    Soumik Bandyopadhyay\*: Universal dynamics of Sachdev-Ye-Kitaev model

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11:00 - 11:30    Coffee break

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11:30 - 13:30    **Session E2**

Chair: M. Ivanov

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11:30 - 12:10    Christine Silberhorn\*: Implementing high-dimensional photonic systems with non-linear integrated optics devices and pulsed light

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12:10 - 12:50    Anne L'Huillier\*: Quantum coherence of attosecond electron wavepacket

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12:50 - 13:10    Radim Filip\*: Quantum non-Gaussian Optics and Acoustic

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13:10 - 13:30    Karol Bartkiewicz: Machine learning and optical quantum information

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13:30 - 15:00    Lunch break

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15:00 - 16:40    **Session E3**

Chair: E. Losero

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15:00 - 15:40    Liang Jiang\*: Bosonic Quantum Information Processing with Superconducting Circuits

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15:40 - 16:20    Mohamed Bourennane\*: Einstein-Podolsky-Rosen pair enables stronger correlations than quantum dense coding

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16:20 - 16:40    Ulysse Chabaud\*: Efficient verification of Boson Sampling experiments

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16:40 - 17:10    Coffee break

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17:10 - 18:30 **Session E4**

Chair: K. Słowik

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17:10 - 17:30 Piotr Kolenderski: Benefits of quantum correlations for communication and optical coherence tomography

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17:30 - 17:50 Elena Losero: Quantum reading: from theoretical demonstration to experimental realization

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17:50 - 18:10 Pau Farrera\*: Nondestructive detection of photonic qubits

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18:10 - 18:30 **Closing**

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**SATURDAY 11/09/2021**

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... - 11:00 **Checkout**

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# Poster Session A

1. **Borhan Ahmadi:** S-matrix evolution of the interaction of a continuous-mode laser field and an atom in normally-ordered creation and annihilation operators
2. **Jessica Oliveira de Almeida:** Superresolution of multiple particles using symmetry under exchange of particles
3. **Julia Amoros-Binefa:** Noisy atomic magnetometry in real time
4. **Gerard Anglès Munné:** Graph state of a quantum holographic code.
5. **Andrea Barresi:** Dipole collision and energy dissipation in 2D UFG and BCS
6. **Ghofrane Bel Hadj Aissa:** A differential geometrical approach to entanglement estimation
7. **Julia Boeyens:** Bayesian Quantum Thermometry
8. **Dan Bosworth:** Spectral properties of a three-body atom-ion hybrid system
9. **Sandra Brandstetter:** Correlations in a Few Fermion System
10. **Anna Bychek:** Superradiant lasing in inhomogeneously broadened ensembles
11. **Giuseppe Calajo:** Few- and many-body photon bound states in quantum nonlinear media
12. **Paulo José Cavalcanti:** Witworld: A generalised probabilistic theory featuring post-quantum steering
13. **Li Chang:** Towards programmable quantum simulations and spatial multiplexing with microscopic atomic ensembles
14. **Dominik Charczun:** Dual-comb cavity ring-down spectroscopy
15. **Anubhav Chaturvedi:** Quantum prescriptions are more ontologically distinct than they are operationally distinguishable
16. **Grzegorz Chimczak:** Finding hidden PT-symmetry via equilibrium frame
17. **Lewis Clark:** Enhancing the performance of optomechanical sensors by continuous photon-counting

18. **Łukasz Cywiński:** Dephasing of spin of an electron undergoing Landau-Zener transition in presence of energy exchange with a thermal
19. **Artur Czerwinski:** Quantum tomography of time-bin states by time-resolved single-photon counting
20. **Chandan Datta:** Resolution of a binary source in the sub-Rayleigh limit by coherent detection
21. **Jérôme Denis:** Extreme depolarization for any spin
22. **Piotr Deuar:** Scalable full quantum dynamics and multi-time correlations of the dissipative Bose-Hubbard model
23. **Klaudia Dilcher:** Kalman filtering techniques applied to an atomic sensor
24. **Dimitry Efimov:** Coincidence scheme for three electron strong-field atomic ionization
25. **Giovanni Ferioli:** Storage and release of subradiant excitations in a dense atomic cloud
26. **Zbigniew Ficek:** Delayed transfer of quantum correlations to populated qubits
27. **Ivan Galinskiy:** Counting MHz phonons: towards generation of non-Gaussian states of motion
28. **Maciej Gałka:** Emergence of a Direct Turbulent Cascade in a Bose Flatland
29. **Filip Gampel:** Continuous observation of a few-body quantum system
30. **Krzysztof Gawryluk:** Berezinskii-Kosterlitz-Thouless phase induced by dissipating quasisolitons
31. **Jacek Gębala:** Three-body calculations in hyperspherical coordinates
32. **Krzysztof Giergiel:** Anderson Complexes: Bound states of atoms due to Anderson localization
33. **Karol Gietka:** Critical Quantum Metrology Across the Superradiant Phase Transition

34. **Nicolas Gigena:** Computable and operationally meaningful multipartite entanglement measures
35. **Piotr Gładysz:** Generation of coherent low-frequency radiation in optically dressed ensembles of polar molecules
36. **Ali Golestani:** Inverse Fourier spectrometer for measuring the temporal envelope of single photon pulses
37. **Weronika Golletz:** Phase diagrams and many-body fluctuations for discrete time crystals
38. **Suchetana Goswami:** Towards protecting quantum correlations in presence of noisy channel: the two-qubit case
39. **Tomasz Karpiuk:** Disruption of a Bose-Fermi droplet by an artificial black hole
40. **Jakub Szlachetka:** Quantum Optical Coherence Tomography using classical light in a single-photon regime

# Poster Session A - online posters

- 01. Hayat Abbas:** The Measurement of Quantum Noise Using A Position-to-Polarization Converter
- 02. Francesco Albarelli:** Probe incompatibility in multiparameter noisy quantum channel estimation
- 03. Ralf Albrecht:** Towards Direct Laser Cooling of Barium Monofluoride
- 04. Laura Ares:** Signal estimation and quantum coherence
- 05. Agnieszka Cichy:** Orbital ordering of ultracold alkaline-earth atoms in optical lattices
- 06. Paolo Comaron:** Non-Hermitian Topological Insulators in One-Dimensional Light-Matter Systems
- 07. Juan Samuel Sebastian Duran Gomez:** Integrated Nanophotonic Waveguide Lattices as Photonic Quantum Simulators
- 08. Shovan Dutta:** Pulsed generation of symmetry-protected nonlocal Bell pairs
- 09. Aurélien Fabre:** Partitioning dysprosium's electronic spin to reveal entanglement in non-classical states
- 010. Marcia Frometa Fernandez:** Coherent light-matter interaction in dense atomic clouds
- 011. María García Díaz:** Experiment-independent assessment of ground state preparation in quantum simulators
- 012. Roman Goncharov:** Heterodyne-based subcarrier wave quantum cryptography under the chromatic dispersion impact
- 013. Jakub Janarek:** Quantum boomerang effect in systems without time reversal invariance
- 014. Marcin Karczewski:** Detection of single-photon-induced Bell nonclassicality of optical beams with homodyne measurements
- 015. Hans Keßler:** Observation of a dissipative time crystal
- 016. Kristian Knakkegaard:** Spatial structure of strongly correlated magnetic polarons in antiferromagnets

**017. Phatthamon Kongkhambut:** Realization of a periodically driven dissipative SU(3)-Dicke model

**018. Georgy Kornakov:** Experiments with mid-heavy antiprotonic atoms in AEGIS

**019. Jan Krzywda:** Landau-Zener transition in presence of longitudinal and transverse quantum noise from reservoirs - an application to electron transfer between quantum dots

**020: Bartosz Markowicz:** Bayesian inference of cavity optomechanics parameters for photon counting measurement

# Poster Session B

1. **Wojciech Górecki:** Multiple-phase quantum interferometry: what can't you learn about the Heisenberg limit from the quantum Fisher information?
2. **Suchetana Goswami:** Towards protecting quantum correlations in presence of noisy channel: the two-qubit case
3. **Piotr Grochowski:** Dynamics of binary quantum mixtures
4. **Raphael Holzinger:** Collective Effects Of Quantum Emitters
5. **Krzysztof Jachymski:** Dynamics of a charged impurity in a degenerate atomic gas
6. **Marcin Jarzyna:** Quantum limits to polarization measurement of classical light
7. **Kaushik Joarder:** Loophole free interferometric test of macrorealism using heralded single photons (p. p\_num)
8. **Hubert Jóźwiak:** Hyperfine structure of molecular hydrogen
9. **Franciszek Juras:** Quantum state tomography of rubidium vapor in paraffin-coated cell
10. **Joanna Kalaga:** The entanglement generation in the system of two interacting anharmonic quantum oscillators
11. **Deeksha Kanti:** Laser-assisted electron-atom radiative recombination in short laser pulses
12. **Sanjay Kapoor:** Multi-stage electro-optic spectral bandwidth compressor as quantum interface
13. **Tulja Varun Kondra:** Catalytic Entanglement
14. **Marek Kopciuch:** Tomography of quantum-states in room-temperature alkali-metal vapour
15. **Jakub Kopyciński:** On coexistence of dark solitons and quantum droplets in a quasi-1D dipolar Bose gas
16. **Marcin Koźbiał:** Quantum-enhanced interferometry with realistic states of finite photon number

17. **Stanisław Kurdziałek:** Back to sources -- the role of coherence in super-resolution imaging revisited
18. **Ewelina Lange:** Rotation-time symmetry as a generalisation of PT symmetry in bosonic systems
19. **Mikołaj Lasota:** Security analysis of the QKD protocol based on IM/DD technique in the regime of strong light pulses
20. **Yink Loong Len:** Quantum metrology with imperfect measurements
21. **Wiesław Leoński:** Transfer of quantum steering in a double Bose-Hubbard chain model
22. **Michał Lipka:** How two-photon interference captures the interaction of an ultra-fast photon and atomic vapor in the bandwidth-mismatched regime?
23. **Maciej Łebek:** Repulsive dynamics of strongly attractive one-dimensional quantum gases
24. **Karol Łukanowski:** Capacity of a lossy photon channel with direct detection
25. **Jan Major:** Dynamics of solitons in two-dimensional topologically nontrivial superfluids
26. **Oleksandr Marchukov:** Quantum fluctuations in nonlinear Schrodinger breathers
27. **Mateusz Mazelanik:** Quantum-memory-enabled super-resolution spectrometer
28. **Paweł Mazurek:** Quantum Heat Engines with Explicite Battery
29. **Jaromír Mika:** Single-mode quantum non-Gaussian light from warm atomic vapor
30. **Michał Mikołajczyk:** Characterization of the resolving power of dispersive single photon spectrometers
31. **Marta Misiaszek:** Polarization entangled-photon pair source ready for full automation
32. **Piotr Morzyński:** Optical atomic clocks experiments at KL FAMO
33. **Marvin Müller:** Sharpening the Definition of Nano-Plasmons: The Energy-Based Plasmonicity Index (EPI)
34. **Monika Mycroft:** Quantum-enhanced interferometry with large heralded photon-number states

35. **Javid Naikoo:** Projective measurements under qubit quantum channels
36. **Moein Naseri:** Coherence for Quantum Computation
37. **Alexssandre Oliveira:** Fluctuation-dissipation relations for thermodynamic distillation processes
38. **Andrzej Opala:** Feed-forward exciton-polariton neural network
39. **Mahasweta Pandit:** Multiparameter estimation in generalized Mach-Zehnder interferometer
40. **Maciej Pylak:** Manifestation of relative phase in dynamics of two interacting Bose-Bose droplet
41. **Miriam Kosik:** Emission enhancement in adatoms bound to graphene nanoflakes



# Poster Session C

1. **Anuradha Anarthe:** Cryogenic microscopy in low light intensity regime
2. **Maria Gieysztor:** Resolution limits in microscopy with correlated photon pairs
3. **Maciej Bartłomiej Kruk:** Fock State Sampling Method for BEC Fluctuations
4. **Palash Pandya:** Hilbert-Schmidt distance and Entanglement witnessing
5. **Ekta Panwar:** Hierarchy of quantum correlations under non-Markovian dynamics
6. **Krzysztof Pawłowski:** LLGPE & quantum droplet
7. **Gabriel Pereira Alves:** For rank-one projective measurements incompatibility implies non-locality
8. **Tomasz Polak:** Coexistence of two kinds of superfluidity in Bose-Hubbard model with density-induced tunnelling
9. **Albert Rico:** Transformations of quantum operations
10. **Ricard Rodriguez:** Edge of the set of no-signaling assemblages
11. **Juan Román-Roche:** Photon condensation in magnetic cavity QED
12. **Journet Romaric:** Building of a quantum gas microscope with strontium atoms
13. **Matteo Rossi:** Learning to measure: adaptive informationally complete generalised measurements for quantum algorithms
14. **Sumit Rout:** Quantum Advantage in Shared Randomness Generation
15. **Roberto Benjamin Salazar Vargas:** Allocation of Quantum resources in Optical networks
16. **Nick Sauerwein:** Cavity-enhanced Microscope for Cold Atoms
17. **Giovanni Scala:** Light interaction with extended quantum systems in dispersive media

18. **Manfredi Scalici:** Non-Markovianity and correlations preservation
19. **Karolina Sędziak-Kacprowicz:** Tomography of quantum states encoded in temporal modes of photons
20. **Sayali Ganesh Shevate:** Building of a quantum gas microscope with strontium atoms
21. **Leonid Shirkov:** Potential energy surface and intermolecular dynamics of pyridine-lithium complex
22. **Aritra Sinha:** Quantized Bubble Nucleation
23. **Filip Sośnicki:** Bridging sub-GHz and telecom spectral bandwidths of single-photon pulses
24. **Tomasz Sowiński:** Dynamical resistivity of a few interacting fermions to the time-dependent potential barrier
25. **Nikodem Stolarczyk:** Accurate tests of QED with precision spectroscopy of molecular deuterium
26. **Alexander Streltsov:** Operational Resource Theory of Imaginarity
27. **Tomasz Szoldra:** Detecting ergodic bubbles at the crossover to many-body localization using neuralnetworks
28. **Michał Tomza:** First observations of quantum shape resonances and Feshbach resonances in ultracold ion-atom mixtures
29. **Thuy Tran:** Collective enhancement of photon collection efficiency from trapped ion crystals
30. **Marek Tylutki:** Vortex Reconnections across the BCS-BEC Crossover
31. **Marcin Umiński:** Tuning ultracold collisions of He\*-Li with external magnetic field
32. **Botao Wang:** Spatio-temporal control of artificial gauge potentials in optical lattices
33. **Adam Widomski:** Generation and detection of QKD symbols encoded in time and frequency
34. **Marek Winczewski:** Bypassing the Intermediate Times Dilemma for Open Quantum System

35. **Emilia Witkowska:** Criticality-enhanced quantum sensing with spin-1 condensates
36. **Marcin Witkowski:** Spectroscopic and photoionisation experiments with Sr, Rb and Hg atoms in KL FAMO
37. **Gabriel Wlazłowski:** Quantum turbulence in fermionic superfluids: results of large scale simulations
38. **Agata Wojciechowska:** Large spin-orbit coupling as a source of Feshbach resonances in ultracold ion-atom mixtures
39. **Adam Wojciechowski:** Magnetic field sensing and imaging using nanodiamonds
40. **Klaudia Zaremba-Kopczyk:** Interactions and collisions in ultracold mixtures of chromium and lithium
41. **Dariusz Wiater:** Spin dynamics in ultracold collisions between Yb<sup>+</sup> ion and Li atoms in the quantum regime
42. **Tanaus Hernandez:** Spin Squeezing for Several Spin-orbit Coupled Fermions in an Optical Lattice (p. p\_num)

## Poster Session C - online posters

01. **Agata Krzywicka:** Thermodynamic properties of Bose gas with bond-charge interaction
02. **Pedro Magnani:** Polarization effects on a Cold Atoms interferometer
03. **Michał Mandrysz:** QSF: Generalised TDSE-solver for intense laser-atom interaction
04. **Marjan Mirahmadi:** Atom Dynamics in an Optical Superlattice
05. **King Lun Ng:** The fate of the false vacuum: BEC at finite temperature as a model of the early universe
06. **Nicolas Fabre:** Time-frequency parameters metrology with a biphoton state
07. **Mateusz Nowotarski:** Quantification of negativity in tripartite PT-symmetric system
08. **P. Dhilipan:** Two photon quantum state interferography
09. **Varad Pande:** Quantum Information Transfer Using Weak Measurements and Any Non-product Resource State
010. **Daniel Pećak:** Unconventional pairing in few-body systems
011. **Jakub Prauzner-Bechcicki:** Strong-field triple ionization of atoms - a theoretical study
012. **Marek Rams:** Quantum phase transition dynamics in the two-dimensional transverse-field Ising model
013. **Filip Rozpedek:** Quantum repeaters based on concatenated bosonic and discrete-variable quantum codes
014. **Michal Sedlák:** Post-processing of quantum instruments
015. **Jan Teske:** Wavefront aberrations of expanding Bose-Einstein condensates
016. **Geza Toth:** Activating hidden metrological usefulness

- 017. Bugra Tuzemen:** Spin-Polarized Droplets In Ultracold Fermi Gas
- 018. Ayaka Usui:** Bayesian parameter estimation using Gaussian states and measurements
- 019. Giuseppe Vitagliano:** Entanglement quantification in atomic ensembles
- 020. Artem Volosniev:** Spin currents from temperature gradients in strongly interacting one-dimensional systems
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