

Quantum Optics and Photonics Division Fachverband Quantenoptik und Photonik (Q)

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Overview of Invited Talks and Sessions

(Lecture halls HS V, AP-HS, WP-HS, HS Botanik, HS I, and HS I PI; Poster Tent)

Invited Talks

Q 2.1	Mon	11:00–11:30	AP-HS	An array of neutral atoms coupled to an optical cavity: A versatile quantum network node — RAPHAEL BENZ, SEBASTIÁN ALEJANDRO MORALES RAMIREZ, MICHA KAPPEL, VINCENT BEGUIN, KRISHNA RELEKAR, ●STEPHAN WELTE
Q 3.1	Mon	11:00–11:30	HS Botanik	3D photonic model systems for topological effects and quantum-optical analogies — ●CHRISTINA JÖRG
Q 10.1	Mon	17:00–17:30	AP-HS	Nuclear quantum memory for hard x-ray photon wave packets — ●SVEN VELTEN, LARS BOCKLAGE, XIWEN ZHANG, KAI SCHLAGE, ANJALI PANCHWANEE, SAKSHATH SADASHIVAIAH, ILYA SERGEEV, OLAF LEUPOLD, ALEKSANDR I. CHUMAKOV, OLGA KOCHAROVSKAYA, RALF RÖHLSBERGER
Q 18.1	Tue	11:00–11:30	HS V	Strong-field physics and nonlinear optical phenomena in two-dimensional honeycomb materials — ●ANNA GALLER
Q 20.1	Tue	11:00–11:30	HS Botanik	Towards quantum logic inspired techniques for high-precision measurements in Penning traps — ●JUAN MANUEL CORNEJO, JAN SCHAPER, NIKITA POLJAKOV, JULIA-AILEEN COENDERS, STEFAN ULMER, CHRISTIAN OSPELKAUS
Q 32.1	Wed	11:00–11:30	HS Botanik	Exploring fundamental constants with high-precision spectroscopy of molecular hydrogen ions — ●SOROOSH ALIGHANBARI, MAGNUS R. SCHENKEL, STEPHAN SCHILLER
Q 34.1	Wed	11:00–11:30	HS I PI	Haken’s quantum field theoretical understanding of semiconductors and lasers and its present-day impact — ●CUN-ZHENG NING
Q 34.2	Wed	11:30–12:00	HS I PI	Bose-Einstein condensation of photons in vertical-cavity surface-emitting lasers — ●MACIEJ PIECZARKA
Q 34.3	Wed	12:00–12:30	HS I PI	Photons in a dye-filled cavity: quantum-optical system interpolating between Bose-Einstein condensates and laser-like states — ●MILAN RADONJIĆ
Q 34.4	Wed	12:30–13:00	HS I PI	From laser physics to nonlinear dynamics and synergetics — ●ECKEHARD SCHÖLL
Q 41.1	Wed	14:30–15:00	HS Botanik	Integration of fiber Fabry-Perot cavities for sensing applications and cavity optomechanics — ●HANNES PFEIFER, LUKAS TENBRAKE, CARLOS SAAVEDRA, FLORIAN GIEFER, JANA BLECHMANN, JOHANNA STEIN, DANIEL STACHANOW, DIETER MESCHADE, KAROL KRZEMPEK, RANDALL GOLDSMITH, WITLEF WIECZOREK, STEFAN LINDEN, SEBASTIAN HOFFERBERTH
Q 42.1	Wed	14:30–15:00	HS I	Effective Lindblad master equations for atoms coupled to dissipative bosonic modes — ●SIMON BALTHASAR JÄGER
Q 52.1	Thu	11:00–11:30	HS Botanik	Recent progress towards the development of a ²²⁹Th-based nuclear optical clock — ●LARS VON DER WENSE
Q 52.6	Thu	12:30–13:00	HS Botanik	Making a solid-state nuclear optical clock — ●KJELD BEEKS, LUCA TOSCANI DE COL, IRA MORAWETZ, RAHUL SINGH, MICHAEL BARTOKOS, THOMAS RIEBNER, FABIAN SCHADEN, GEORGY KAZAKOV, TOMAS SIKORSKY, THOMAS LAGRANGE, FABRIZIO CARBONE, THORSTEN SCHUMM

Q 54.1	Thu	11:00–11:30	HS I PI	New Opportunities for Sensing via Continuous Measurement — •DAYOU YANG, SUSANA F. HUELGA, MARTIN B. PLENIO
Q 66.1	Fri	11:00–11:30	HS V	Enhancing pair tunneling in the Hubbard model by Floquet engineering — •ANDREA BERGSCHNEIDER
Q 67.1	Fri	11:00–11:30	AP-HS	Towards Quantum Simulation with Qudits — •MARTIN RINGBAUER
Q 68.1	Fri	11:00–11:30	HS Botanik	Multi-color excitation of quantum emitters — •THOMAS BRACHT

Invited Talks of the joint Symposium Molecular Spectroscopy of Liquid Jets (SYML)

See SYML for the full program of the symposium.

SYML 1.1	Mon	11:00–11:30	HS 1+2	The challenging road to work function measurements from aqueous solutions — •BERND WINTER
SYML 1.2	Mon	11:30–12:00	HS 1+2	Liquid Delivery Systems for Time Resolved X-ray Spectroscopy — •ZHONG YIN
SYML 1.3	Mon	12:00–12:30	HS 1+2	UV photoelectron spectroscopy of aqueous solutions — •HELEN FIELDING, JOHANNA RADEMACHER, KATE ROBERTSON, EDOARDO SIMONETTI
SYML 1.4	Mon	12:30–13:00	HS 1+2	Decoherence and electron transport in liquid water observed with attosecond interferometric spectroscopy — •HUGO MARROUX ET AL

Invited Talks of the joint Symposium SAMOP Dissertation Prize 2025 (SYAD)

See SYAD for the full program of the symposium.

SYAD 1.1	Mon	14:30–15:00	HS 1+2	A simple method to separate single- from multi-particle dynamics in time-resolved spectroscopy — •JULIAN LÜTTIG
SYAD 1.2	Mon	15:00–15:30	HS 1+2	Time-resolving quantum dynamics in atoms and molecules with intense x-ray lasers and neural networks — •ALEXANDER MAGUNIA
SYAD 1.3	Mon	15:30–16:00	HS 1+2	How rotation shapes the decay of diatomic carbon anions — •VIVIANE C. SCHMIDT
SYAD 1.4	Mon	16:00–16:30	HS 1+2	Interstellar stardust from stellar explosions recorded in a deep-ocean ferromanganese crust within the last 10 million years — •DOMINIK KOLL

Invited Talks of the joint Symposium Polaritonic Effects in Molecular System (SYPE)

See SYPE for the full program of the symposium.

SYPE 1.1	Tue	11:00–11:30	HS 1+2	Ab initio quantum electrodynamics: from microscopic details to thermodynamics — •MICHAEL RUGGENTHALER
SYPE 1.2	Tue	11:30–12:00	HS 1+2	Ultrafast coherent exciton dynamics mediated by field-matter couplings — •ANTONIETTA DE SIO
SYPE 1.3	Tue	12:00–12:30	HS 1+2	Open system dynamics for non-radiative transitions in molecules — •CLAUDIU GENES
SYPE 1.4	Tue	12:30–13:00	HS 1+2	Strong light-matter coupling: from self-hybridized polaritons to Casimir self-assembly — •TIMUR SHEGAI

Invited Talks of the joint Symposium Quantum Science and more in Ghana and Germany (SYGG)

See SYGG for the full program of the symposium.

SYGG 1.1	Tue	11:00–11:05	WP-HS	Welcome Adress — •BIRGIT MÜNCH
SYGG 1.2	Tue	11:05–11:20	WP-HS	Quantum Education in Ghana — •DORCAS ATTUABEA ADDO
SYGG 1.3	Tue	11:20–11:45	WP-HS	Mathematical and Computational Physics Research In Ghana: To Cultivate a Knowledge-Based and Sustainable Development Economy — •HENRY MARTIN, HENRY ELORM QUARSHIE, MARK PAAL, FRANCIS KOFI AMPONG, ERIC KWABENA KYEH ABAVARE, MATTEO COLANGELI, ALESSANDRA CONTINENZA, JAIME MARIAN

SYGG 1.4	Tue	11:45–12:10	WP-HS	Forecasting the Economic Health of Ghana Using Quantum-Enhanced Long Short-Term Memory Model — ●PETER NIMBE, HENRY MARTIN, DORCAS ATTUABEA ADDO, NICODEMUS SONGOSE AWARAYI
SYGG 1.5	Tue	12:10–12:40	WP-HS	Quantum Technology with Spins — ●JOERG WRACHTRUP
SYGG 1.6	Tue	12:40–13:00	WP-HS	Renewable Energy Technologies for Rural Ghana: The Role of Appropriate Technology for Tailored solutions — ●MICHAEL KWEKU EDEM DONKOR

Invited Talks of the joint Symposium Foundations of Quantum Theory (SYQT)

See SYQT for the full program of the symposium.

SYQT 1.1	Wed	11:00–11:30	HS 1+2	Against ‘local causality’ — ●GUIDO BACCIAGALUPPI
SYQT 1.2	Wed	11:30–12:00	HS 1+2	Philosophy of Quantum Thermodynamics — ●CARINA PRUNKL
SYQT 1.3	Wed	12:00–12:30	HS 1+2	Can quantum information be the underpinning of quantum physics? — ●PAOLO PERINOTTI
SYQT 1.4	Wed	12:30–13:00	HS 1+2	Spin-bounded correlations: rotation boxes within and beyond quantum theory — ALBERT ALOY, ●THOMAS GALLEY, CAROLINE JONES, STEFAN LUDESCHER, MARKUS MÜLLER

Invited Talks of the joint Symposium Hidden Variables: Contributions of Women to Quantum Physics (SYWQ)

See SYWQ for the full program of the symposium.

SYWQ 1.1	Thu	11:00–11:30	HS 1+2	Reshaping the History of Quantum Physics: Paths to Gender Equality — ●ANDREA REICHENBERGER
SYWQ 1.2	Thu	11:30–12:00	HS 1+2	Lucy Mensing: Forgotten Pioneer of Quantum Mechanics — ●GERNOT MÜNSTER
SYWQ 1.3	Thu	12:00–12:30	HS 1+2	Roller-coasting women scientific trajectories: New frontiers to accelerate (quantum) science — ●MARILÙ CHIOFALO
SYWQ 1.4	Thu	12:30–13:00	HS 1+2	Who decides scientific authority and how? — ●ANNA SANPERA

Prize and Invited Talks of the joint Awards Symposium (SYAS)

See SYAS for the full program of the symposium.

SYAS 1.1	Thu	14:30–15:10	HS 1+2	A journey in mathematical quantum physics — ●REINHARD F. WERNER
SYAS 1.2	Thu	15:10–15:50	HS 1+2	Precision Tests of the Standard Model at Low Energies Using Stored Exotic Ions in Penning Traps — ●KLAUS BLAUM
SYAS 1.3	Thu	15:50–16:30	HS 1+2	Controlling light by atoms and atoms by light: from dark-state polaritons to many-body spin physics — ●MICHAEL FLEISCHHAUER
SYAS 1.4	Thu	16:30–16:35	HS 1+2	Quantum history at your fingertips: Launch of the DPG’s Quantum History Wall — ●ARNE SCHIRRMACHER

Invited Talks of the joint Symposium Laser-Cooled Molecules (SYLC)

See SYLC for the full program of the symposium.

SYLC 1.1	Fri	11:00–11:30	HS 1+2	Measuring the electron electric dipole moment with laser-cooled molecules — ●MICHAEL TARBUTT
SYLC 1.2	Fri	11:30–12:00	HS 1+2	Laser-cooling of molecules in various charge states — ●ROBERT BERGER
SYLC 1.3	Fri	12:00–12:30	HS 1+2	Progress in quantum gases of polar molecules: Collisions, laser cooling, and trapping techniques — MARA MEYER ZUM ALTEN BORGLOH, JULE HEIER, BARAA SHAMMOUT, FRITZ VON GIERKE, TIMO POLL, JULIUS NIEDERSTUCKE, PAUL KAEBERT, SEBASTIAN ANSKEIT, JAKOB STALMANN, LEON KARPA, MIRCO SIERCKE, ●SILKE OSPELKAUS
SYLC 1.4	Fri	12:30–13:00	HS 1+2	Progress in laser cooling the AlF molecule — ●SIDNEY WRIGHT

Sessions

Q 1.1–1.6	Mon	11:00–12:30	HS V	Laser Technology and Applications (joint session Q/K)
Q 2.1–2.7	Mon	11:00–13:00	AP-HS	Quantum Networks, Repeaters, and QKD I (joint session Q/QI)
Q 3.1–3.7	Mon	11:00–13:00	HS Botanik	Photonics I
Q 4.1–4.7	Mon	11:00–12:45	HS I	Rydberg Atoms, Ions, and Molecules (joint session Q/MO)
Q 5.1–5.8	Mon	11:00–13:00	HS I PI	Collective Effects and Disordered Systems
Q 6.1–6.7	Mon	11:00–13:00	HS PC	Precision Spectroscopy of Atoms and Ions I (joint session A/Q)
Q 7.1–7.8	Mon	11:00–13:00	HS XV	Polaritonic Effects in Molecular Systems I (joint session MO/Q)
Q 8.1–8.6	Mon	11:00–12:45	HS XI ITW	Laser Systems – Optical Methods (joint session K/Q)
Q 9.1–9.8	Mon	17:00–19:00	HS V	Photonics (3D Print) (joint session Q/K)
Q 10.1–10.7	Mon	17:00–19:00	AP-HS	Quantum Optics and Nuclear Quantum Optics I
Q 11.1–11.8	Mon	17:00–19:00	HS Botanik	QED and Cavity QED
Q 12.1–12.8	Mon	17:00–19:00	HS I	Quantum Optomechanics I
Q 13.1–13.8	Mon	17:00–19:00	HS I PI	Ultracold Matter (Bosons) I (joint session Q/A)
Q 14.1–14.6	Mon	17:00–18:45	HS VIII	Quantum Metrology and Sensing (joint session QI/Q)
Q 15.1–15.6	Mon	17:00–18:45	HS II	Atom and Ion Qubits (joint session QI/Q)
Q 16.1–16.7	Mon	17:00–19:00	KIHS Mathe	Ultra-cold atoms, ions and BEC I (joint session A/Q)
Q 17.1–17.7	Mon	17:00–19:00	HS PC	Precision Spectroscopy of Atoms and Ions II (joint session A/Q)
Q 18.1–18.6	Tue	11:00–12:45	HS V	Strong-Field and Ultrafast Phenomena (joint session Q/MO)
Q 19.1–19.8	Tue	11:00–13:00	AP-HS	Quantum Networks, Repeaters, and QKD II (joint session Q/QI)
Q 20.1–20.6	Tue	11:00–12:45	HS Botanik	Atom & Ion Clocks and Metrology I
Q 21.1–21.8	Tue	11:00–13:00	HS I	Quantum Optomechanics II
Q 22.1–22.8	Tue	11:00–13:00	HS I PI	Ultracold Matter (Bosons) II (joint session Q/A)
Q 23.1–23.7	Tue	11:00–13:00	KIHS Mathe	Ultra-cold Atoms, Ions and BEC II (joint session A/Q)
Q 24.1–24.6	Tue	14:00–15:30	HS II	Quantum Computing Implementations (joint session QI/Q)
Q 25.1–25.65	Tue	14:00–16:00	Tent	Poster – Cold Atoms and Molecules, Matter Waves (joint session Q/A/MO)
Q 26.1–26.40	Tue	14:00–16:00	Tent	Poster – Precision Measurement, Metrology, and Quantum Effects
Q 27.1–27.34	Tue	14:00–16:00	Tent	Poster – Ultra-cold Atoms, Ions and BEC (joint session A/Q)
Q 28.1–28.6	Tue	14:00–16:00	Tent	Poster – Ultra-cold Plasmas and Rydberg Systems (joint session A/Q)
Q 29.1–29.6	Tue	14:00–16:00	Tent	Poster – Polaritonic Effects in Molecular Systems (joint session MO/Q)
Q 30.1–30.6	Wed	11:00–12:30	HS V	Quantum Sensing I (joint session Q/QI)
Q 31.1–31.8	Wed	11:00–13:00	AP-HS	Quantum Networks, Repeaters, and QKD III (joint session Q/QI)
Q 32.1–32.7	Wed	11:00–13:00	HS Botanik	Atom & Ion Clocks and Metrology II
Q 33.1–33.8	Wed	11:00–13:00	HS I	Matter Wave Interferometry I
Q 34.1–34.4	Wed	11:00–13:00	HS I PI	In Memoriam of Hermann Haken (joint session Q/MO)
Q 35.1–35.7	Wed	11:00–13:00	HS PC	Precision Spectroscopy of Atoms and Ions III (joint session A/Q)
Q 36.1–36.7	Wed	11:00–13:00	KIHS Mathe	Ultra-cold Atoms, Ions and BEC III (joint session A/Q)
Q 37.1–37.8	Wed	11:00–13:00	HS XV	Polaritonic Effects in Molecular Systems II (joint session MO/Q)
Q 38	Wed	13:15–14:15	AP-HS	Members' Assembly
Q 39.1–39.8	Wed	14:30–16:30	HS V	Photon BEC
Q 40.1–40.8	Wed	14:30–16:30	AP-HS	Quantum Optics and Nuclear Quantum Optics II
Q 41.1–41.7	Wed	14:30–16:30	HS Botanik	Quantum Technologies (Color Centers and Ion Traps) I (joint session Q/QI)
Q 42.1–42.6	Wed	14:30–16:15	HS I	Open Quantum Systems I (joint session Q/QI)
Q 43.1–43.8	Wed	14:30–16:30	WP-HS	Ultracold Matter (Bosons) III (joint session Q/A)
Q 44.1–44.8	Wed	14:30–16:45	HS VIII	Quantum Networks (joint session QI/Q)

Q 45.1–45.6	Wed	14:30–16:15	HS IX	Mechanical, Macroscopic, and Continuous-variable Quantum Systems (joint session QI/Q)
Q 46.1–46.5	Wed	14:30–15:45	KIHS Mathe	Precision Spectroscopy of Atoms and Ions IV (joint session A/Q)
Q 47.1–47.7	Wed	14:30–16:30	HS XVI	Cold Molecules and Cold Chemistry (joint session MO/Q)
Q 48.1–48.58	Wed	17:00–19:00	Tent	Poster – Quantum Optics, Technologies, and Optomechanics
Q 49.1–49.45	Wed	17:00–19:00	Tent	Poster – Photonics, Lasers, and Applications
Q 50.1–50.7	Thu	11:00–12:45	HS V	Ultracold Matter (Fermions) I (joint session Q/A)
Q 51.1–51.8	Thu	11:00–13:00	AP-HS	Quantum Computing and Simulation I (joint session Q/QI)
Q 52.1–52.6	Thu	11:00–13:00	HS Botanik	Nuclear Clocks
Q 53.1–53.8	Thu	11:00–13:00	HS I	Matter Wave Interferometry II
Q 54.1–54.6	Thu	11:00–12:45	HS I PI	Quantum Sensing II (joint session Q/QI)
Q 55.1–55.6	Thu	11:00–12:45	HS II	Decoherence and Open Quantum Systems (joint session QI/Q)
Q 56.1–56.7	Thu	11:00–13:00	KIHS Mathe	Precision Spectroscopy of Atoms and Ions V (joint session A/Q)
Q 57.1–57.6	Thu	11:00–12:45	HS PC	Ultra-cold Plasmas and Rydberg Systems I (joint session A/Q)
Q 58.1–58.8	Thu	14:30–16:30	HS IX	Quantum Communication II: Implementations (joint session QI/Q)
Q 59.1–59.8	Thu	14:30–16:30	GrHS Mathe	Ultra-cold atoms, ions and BEC IV (joint session A/Q)
Q 60.1–60.7	Thu	14:30–16:30	KIHS Mathe	Precision Spectroscopy of Atoms and Ions VI (joint session A/Q)
Q 61.1–61.5	Thu	14:30–15:45	HS PC	Ultra-cold Plasmas and Rydberg Systems II (joint session A/Q)
Q 62.1–62.45	Thu	17:00–19:00	Tent	Poster – Quantum Information Technologies (joint session Q/QI)
Q 63.1–63.69	Thu	17:00–19:00	Tent	Poster – Quantum Information (joint session QI/Q)
Q 64.1–64.21	Thu	17:00–19:00	Tent	Poster – Precision Spectroscopy of Atoms and Ions (joint session A/Q)
Q 65.1–65.15	Thu	17:00–19:00	Tent	Poster – Cold Molecules (joint session MO/Q)
Q 66.1–66.7	Fri	11:00–13:00	HS V	Ultracold Matter (Fermions) II (joint session Q/A)
Q 67.1–67.7	Fri	11:00–13:00	AP-HS	Quantum Computing and Simulation II (joint session Q/QI)
Q 68.1–68.7	Fri	11:00–13:00	HS Botanik	Quantum Technologies (Color Centers and Ion Traps) II (joint session Q/QI)
Q 69.1–69.8	Fri	11:00–13:00	HS I	Open Quantum Systems II (joint session Q/QI)
Q 70.1–70.8	Fri	11:00–13:00	HS I PI	Nanophotonics I
Q 71.1–71.8	Fri	11:00–13:00	HS II	Quantum Control II (joint session QI/Q)
Q 72.1–72.7	Fri	11:00–12:45	GrHS Mathe	Ultra-cold Atoms, Ions and BEC V (joint session A/Q)
Q 73.1–73.7	Fri	14:30–16:15	AP-HS	Quantum Technologies (Detectors and Photon Sources) (joint session Q/QI)
Q 74.1–74.8	Fri	14:30–16:30	HS Botanik	Photonics II
Q 75.1–75.8	Fri	14:30–16:30	HS I	Quantum Technologies (Solid State Systems) (joint session Q/QI)
Q 76.1–76.8	Fri	14:30–16:30	WP-HS	Nanophotonics II

Members' Assembly of the Quantum Optics and Photonics Division

Wednesday 13:15–14:15 AP-HS