

## Quantum Information Division Fachverband Quanteninformatik (QI)

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### Overview of Invited Talks and Sessions

(Lecture halls HFT-FT 101, HFT-FT 131, and HFT-TA 441; Poster A and B)

#### Invited Talks

QI 1.1	Mon	9:30–10:00	HFT-FT 101	<b>Quantum causal structure and quantum memory</b> — ●FABIO COSTA
QI 2.1	Mon	9:30–10:00	HFT-FT 131	<b>Spin circuit-QED in the time-domain</b> — ●JURGEN DIJKEMA, XIAO XUE, PATRICK HARVEY-COLLARD, MAXIMILIAN RIMBACH-RUSS, SANDER L. DE SNOO, GUOJI ZHENG, AMIR SAMMAK, GIORDANO SCAPUCCI, LIEVEN M.K. VANDERSYPEN
QI 2.4	Mon	10:30–11:00	HFT-FT 131	<b>Gate defined electron and hole quantum dots in bilayer graphene</b> — ●LUCA BANSZERUS
QI 5.1	Mon	15:00–15:30	HFT-FT 101	<b>Multi-copy activation of genuine multipartite entanglement in continuous-variable systems</b> — KLÁRA BAKSOVÁ, OLGA LESKOV-JANOVÁ, LADISLAV MIŠTA, ●ELIZABETH AGUDELO, NICOLAI FRIIS
QI 6.1	Mon	15:00–15:30	HFT-FT 131	<b>Heat engine and force sensing with trapped ions</b> — ●KILIAN SINGER, BO DENG, MORITZ GÖB, MAX MASUHR, DAQING WANG
QI 8.1	Mon	16:30–17:00	HFT-FT 131	<b>Quantum Simulations in Integrated Waveguide Arrays</b> — ●JASMIN D. A. MEINECKE, FLORIAN HUBER, BENEDIKT BRAUMANDL, SHOLEH RAZAVIAN, JAN DZIEWIOR, ROBERT JONSSON, JOHANNES KNÖRZER, HARALD WEINFURTER, ALEXANDER SZAMEIT
QI 9.1	Tue	9:30–10:00	HFT-FT 101	<b>Does provable absence of barren plateaus imply classical simulability? Or, why we might need to rethink variational quantum computing</b> — ●ZOE HOLMES
QI 10.1	Tue	9:30–10:00	HFT-FT 131	<b>Loophole-free Bell Inequality Violation with Superconducting Circuits</b> — ●ANDREAS WALLRAFF
QI 10.2	Tue	10:00–10:30	HFT-FT 131	<b>Microwave quantum networks</b> — ●KIRILL G. FEDOROV
QI 10.6	Tue	11:30–12:00	HFT-FT 131	<b>Quantum sensing of axionic dark matter with a phase resolved haloscope</b> — ●AUDREY COTTET
QI 10.7	Tue	12:00–12:30	HFT-FT 131	<b>Demonstration of Quantum Advantage in Microwave Quantum Radar</b> — RÉOUVEN ASSOULY, RÉMY DASSONNEVILLE, THÉAU PÉRONNIN, ●AUDREY BIENFAIT, BENJAMIN HUARD
QI 15.1	Wed	9:30–10:00	HFT-FT 101	<b>Computationally Universal Phases of Quantum Matter</b> — ●ROBERT RAUSSENDORF, CIHAN OKAY, DONGSHENG WANG, DAVID STEPHEN, HENDRIK P NAUTRUP
QI 22.1	Thu	9:30–10:00	HFT-FT 101	<b>Quantum computing for chemistry - recent results and an industry perspective</b> — ●CHRISTIAN GOGOLIN
QI 24.1	Thu	9:30–10:00	HFT-TA 441	<b>Verification of quantum measurements via self-testing</b> — ●LAURA MANČINSKA
QI 28.1	Thu	15:00–15:30	HFT-FT 131	<b>An atomic scale multi-qubit platform</b> — ●HONG THI BUI, YU WANG, YI CHEN, CHRISTOPH WOLF, YUJEONG BAE, ANDREAS J. HEINRICH, SOO-HYON PHARK
QI 32.1	Fri	9:30–10:00	HFT-FT 131	<b>Quantum levitodynamics: Harnessing quantum motion of levitated particles for fundamental and applied quantum research</b> — ●SUNGKUN HONG

## Invited Talks of the joint Symposium Entanglement in Quantum Information, Condensed Matter and Gravity (SYQI)

See SYQI for the full program of the symposium.

SYQI 1.1	Wed	15:00–15:30	H 0105	<b>The Quantum Internet: Concepts, Challenges and Progress</b> — •RONALD HANSON
SYQI 1.2	Wed	15:30–16:00	H 0105	<b>Strange metals - A platform to study entanglement in condensed matter?</b> — •SILKE PASCHEN
SYQI 1.3	Wed	16:00–16:30	H 0105	<b>Quantum black holes may not have interiors</b> — •VIJAY BALASUBRAMANIAN
SYQI 1.4	Wed	16:30–17:00	H 0105	<b>Gauge Symmetry-Resolved Entanglement in Lattice Gauge Theories: A Tensor Network Approach</b> — NOA FELDMAN, JOHANNES KNAUTE, EREZ ZOHAR, •MOSHE GOLDSTEIN
SYQI 1.5	Wed	17:00–17:30	H 0105	<b>Parameter estimation of gravitational waves with a quantum metropolis algorithm</b> — •MIGUEL ANGEL MARTIN - DELGADO

## Invited Talks of the joint Symposium Quantum Communication: Promises or Reality? (SYQC)

See SYQC for the full program of the symposium.

SYQC 1.1	Fri	9:30–10:00	H 0105	<b>Efficient Quantum Dot Micropillars for Quantum Networks</b> — DAVID DLAKA, PETROS ANDROVITSANEAS, ANDREW YOUNG, QIRUI MA, EDMUND HARBORD, •RUTH OULTON
SYQC 1.2	Fri	10:00–10:30	H 0105	<b>Superconducting Single Photon Detectors - Limited only by the laws of physics</b> — •ANDREAS FOGNINI
SYQC 1.3	Fri	10:45–11:15	H 0105	<b>Laser triggering of quantum light sources using engineered optical pulses</b> — •KIMBERLEY HALL
SYQC 1.4	Fri	11:15–11:45	H 0105	<b>Quantum Networks and Technologies</b> — •ROB THEW

## Sessions

QI 1.1–1.12	Mon	9:30–13:00	HFT-FT 101	<b>Quantum Foundations</b>
QI 2.1–2.10	Mon	9:30–12:45	HFT-FT 131	<b>Semiconductor Qubits (joint session QI/HL)</b>
QI 3.1–3.14	Mon	9:30–13:15	HFT-TA 441	<b>Quantum Communication</b>
QI 4.1–4.10	Mon	15:00–18:00	EW 203	<b>Materials and Devices for Quantum Technology I (joint session HL/QI)</b>
QI 5.1–5.10	Mon	15:00–18:00	HFT-FT 101	<b>Entanglement Theory</b>
QI 6.1–6.4	Mon	15:00–16:15	HFT-FT 131	<b>Trapped Ion and Atom Qubits</b>
QI 7.1–7.11	Mon	15:00–18:00	HFT-TA 441	<b>Quantum Error Correction</b>
QI 8.1–8.7	Mon	16:30–18:30	HFT-FT 131	<b>Photons and Photonic Quantum Processors</b>
QI 9.1–9.13	Tue	9:30–13:15	HFT-FT 101	<b>Quantum Machine Learning and Classical Simulability</b>
QI 10.1–10.11	Tue	9:30–13:30	HFT-FT 131	<b>Focus Session: Exploring Quantum Entanglement with Superconducting Qubits and Resonators (joint session QI/TT)</b>
QI 11.1–11.8	Tue	9:30–11:45	HFT-TA 441	<b>Quantum Thermodynamics</b>
QI 12.1–12.23	Tue	11:00–14:30	Poster B	<b>Poster I</b>
QI 13.1–13.15	Tue	11:00–13:00	Poster B	<b>Poster MP (joint session MP/QI)</b>
QI 14.1–14.5	Tue	11:45–13:00	H 3007	<b>Focus Session: Nanomechanical Systems for Classical and Quantum Sensing I (joint session TT/DY/HL/QI)</b>
QI 15.1–15.12	Wed	9:30–13:00	HFT-FT 101	<b>Quantum Computing Theory</b>
QI 16.1–16.14	Wed	9:30–13:15	HFT-FT 131	<b>Superconducting Qubits (joint session QI/TT)</b>
QI 17.1–17.7	Wed	9:30–11:15	HFT-TA 441	<b>Quantum Information: Concept and Methods I</b>
QI 18.1–18.39	Wed	11:00–14:30	Poster A	<b>Poster II</b>
QI 19.1–19.13	Wed	15:00–18:15	H 0104	<b>Superconducting Electronics: Qubits I (joint session TT/QI)</b>
QI 20.1–20.10	Wed	15:00–17:45	EW 202	<b>Focus Session: Nanomechanical Systems for Classical and Quantum Sensing II (joint session HL/DY/TT/QI)</b>
QI 21.1–21.8	Thu	9:30–13:00	EW 202	<b>Focus Session: Nanomechanical Systems for Classical and Quantum Sensing III (joint session HL/DY/TT/QI)</b>
QI 22.1–22.13	Thu	9:30–13:15	HFT-FT 101	<b>Quantum Simulation I</b>

QI 23.1–23.13	Thu	9:30–13:00	HFT-FT 131	<b>Quantum Control</b>
QI 24.1–24.14	Thu	9:30–13:30	HFT-TA 441	<b>Verification and Benchmarking of Quantum Systems</b>
QI 25.1–25.9	Thu	14:00–16:45	EW 203	<b>Materials and Devices for Quantum Technology II (joint session HL/QI)</b>
QI 26.1–26.5	Thu	15:00–16:15	H 2053	<b>Superconducting Electronics: Qubits II (joint session TT/QI)</b>
QI 27.1–27.10	Thu	15:00–17:45	HFT-FT 101	<b>Quantum Simulation II</b>
QI 28.1–28.10	Thu	15:00–18:00	HFT-FT 131	<b>Surface Atom and Color Center Spin Qubits</b>
QI 29.1–29.10	Thu	15:00–17:45	HFT-TA 441	<b>Quantum Information: Concept and Methods II</b>
QI 30	Thu	18:00–19:00	HFT-TA 441	<b>Members’ Assembly</b>
QI 31.1–31.11	Fri	9:30–12:30	HFT-FT 101	<b>Decoherence and Open Quantum Systems</b>
QI 32.1–32.14	Fri	9:30–13:30	HFT-FT 131	<b>Quantum Sensing and Metrology</b>
QI 33.1–33.9	Fri	9:30–12:00	HFT-TA 441	<b>Quantum Materials and Many-Body Systems</b>

### Members’ Assembly of the Quantum Information Division

Thursday 18:00–19:00 HFT-TA 441

An invitation including the agenda will be sent by email.