



Monday, 2 November

8:15am **Technical Support (if needed)**

Welcome Desk & Chat

8:55am **Opening Speech**

Bluefors Room

9am **Plenary Session**

Bluefors Room

Chaired by: Prof. Hugues de Riedmatten

9am **Quantum networks based on integrated optics and pulsed light**

» [Prof. Christine Silberhorn](#)

9:45am **Applying Quantum Sensors**

» [Prof. Joerg Wrachtrup](#)

10:30am **Break & Networking**

Networking & Break Area

10:50am **Quantum Communication 1**

Bluefors Room

Chaired by: Dr. Sabine Wollmann

10:50am **Distributing 1GHz clocked entangled photon pairs**

» [Ms. Ginny Shooter](#), Mr. Ziheng Xiang, Mr. Jonathan Müller, Dr. Joanna Skiba-Szymanska, Dr. Jan Huwer, Mr. Jonathan Griffiths, Mr. Thomas Mitchell, Mr. Matthew Anderson, Dr. Tina Müller, Dr. Andrey Krysa, Dr. Mark Stevenson, Prof. Jon Heffernan, Prof. David Ritchie, Dr. Andrew Shields

11:05am **Space division multiplexing enhancing quantum key distribution rate**

» [Ms. Beatrice Da Lio](#), Dr. Davide Bacco, Mr. Daniele Cozzolino, Dr. Francesco Da Ros, Dr. Xueshi Guo, Dr. Yunhong Ding, Mr. Yusuke Sasaki, Dr. Kazuhiko Aikawa, Dr. Shigehito Miki, Dr. Hirotaka Terai, Dr. Taro Yamashita, Dr. Jonas Schou Neergaard-Nielsen, Dr. Michael Galili, Prof. Karsten Rottwitz, Prof. Ulrik Lund Andersen, Prof. Toshio Morioka, Prof. Leif Katsuo Oxenløwe

11:20am **Integrated photonics for quantum communications on a CubeSat**

» [Mr. Ömer Bayraktar](#), Mr. Jonas Pudelko, Mr. Imran Khan, Dr. Winfried Boxleitner, Mr. Stefan Petschornig, Dr. Christoph Pacher, Prof. Gerd Leuchs, Dr. Christoph Marquardt

11:35am **Device-Independent Quantum Key Distribution with Random Key Basis**

» [Dr. Rene Schwonnek](#), Dr. Koon Tong Goh, Mr. Ignatius William Primaatmaja, Mr. Ernest Tan, Ms. Ramona Wolf, Prof. Valerio Scarani, Prof. Charles Lim

11:50am **Continuous variable quantum key distribution system with true local oscillator for metropolitan networks**

» [Ms. Jennifer Aldama Guardia](#), [Dr. Sebastian Etcheverry](#), Dr. Raju Valivarthi, Dr. Fabian Zwiehoff, Dr. Valerio Pruneri

12:05pm **Multiplatform study of four wave mixing for quantum frequency comb generation**

» [Dr. Natalia Bruno](#), Mx. Tecla Gabbrielli, Dr. Francesco Cappelli, Mr. Nicola Corrias, Mrs. Ivana Mastroserio, Dr. Pietro Lombardi, Prof. Francesco Cataliotti, Dr. Paolo De Natale, Dr. Alessandro Zavatta

12:20pm **Single-photon emission from a two-dimensional semiconductor quantum emitter coupled into a photonic waveguide**

» [Ms. Eva Schöll](#), Dr. Carlos Errando-Herranz, Ms. Micaela Laini, Mr. Samuel Gyger, Dr. Ali Elshaari, Dr. Artur Branny, Ms. Ulrika Wennberg, Mr. Sebastien Barbat, Mr. Thibaut Renaud, Dr. Mauro Brotons-Gisbert, Dr. Christian Bonato, Prof. Brian Gerardot, Prof. Val Zwiller, Dr. Klaus D. Jöns



Continued from **Monday, 2 November**

10:50am **Quantum sensing and metrology 1**

Kiutra Room

Chaired by: Prof. Joerg Wrachtrup

10:50am **Atomic-scale imaging with a single-spin quantum sensor**

» [Prof. Tim Taminiau](#)

11:20am **Quantum enhancements in multiparameter metrology: From squeezing to non-Gaussian states**

» [Dr. Manuel Gessner](#), [Dr. Augusto Smerzi](#), [Dr. Luca Pezzè](#)

11:35am **Single-Shot Readout of NV Centers in Diamond via Cryogenic Spin-to-Charge Conversion**

» [Dr. Francesco Poggiali](#), [Mr. Dominik Irber](#), [Dr. Friedemann Reinhard](#)

11:50am **Microscopy with Undetected Photons in the Mid-infrared**

» [Ms. Inna Kviatkovsky](#), [Dr. Helen Chrzanowski](#), [Ms. Ellen Avery](#), [Dr. Hendrik Bartolomaeus](#), [Dr. Sven Ramelow](#)

12:05pm **Hyperspectral Infrared Microscopy With Visible Light**

» [Dr. Anna Paterova](#), [Dr. Sivakumar Maniam](#), [Dr. Hongzhi Yang](#), [Dr. Gianluca Grenchi](#), [Dr. Leonid Krivitsky](#)

12:20pm **Ab initio magneto-optical spectrum of Group-IV – Vacancy color centers in diamond**

» [Dr. Gergő Thiering](#), [Prof. Adam Gali](#)

10:50am **Hybrid systems and quantum non-linear optics**

ID Quantique Room

Chaired by: Prof. Tracy Northup

10:50am **A single molecule strongly coupled to a microcavity: nonlinear optics at the single-photon level**

» [Prof. Stephan Goetzinger](#), [Mr. Andre Pscherer](#), [Mr. Manuel Meierhofer](#), [Dr. Daqing Wang](#), [Dr. Hrishikesh Kelkar](#), [Dr. Tobias Utikal](#), [Prof. Vahid Sandoghdar](#)

11:20am

Hybrid entanglement swapping for connecting heterogeneous quantum networks

» [Mr. Tom Darras](#), [Dr. Giovanni Guccione](#), [Dr. Adrien Cavallès](#), [Dr. Hanna Le Jeannic](#), [Dr. Varun Verma](#), [Dr. Sae Woo Nam](#), [Prof. Julien Laurat](#)

11:35am

Strong light-mediated coupling between a mechanical oscillator and atomic spins across one meter

» [Mr. Thomas Karg](#), [Dr. Baptiste Gouraud](#), [Mr. Chun Tat Ngai](#), [Mr. Gian-Luca Schmid](#), [Prof. Klemens Hammerer](#), [Prof. Philipp Treutlein](#)

11:50am

Light-matter interactions via extremely-tapered fibers: towards room-temperature quantum nonlinear optics

» [Mr. Gal Winer](#), [Mr. Ran Finkelstein](#), [Ms. Or Arenfrid](#), [Mr. Gabriel Gundelman](#), [Mr. David Zeev Koplovich](#), [Dr. Ofer Firstenberg](#), [Prof. Barak Dayan](#)

12:05pm

Dynamic control of Purcell enhanced emission of erbium ions in nanoparticles

» [Dr. bernardo casabone](#), [Mr. Chetan Deshmukh](#), [Dr. Shuping Liu](#), [Dr. Diana Serrano](#), [Dr. Alban Ferrier](#), [Dr. Thomas Hümmer](#), [Prof. Philippe Goldner](#), [Prof. David Hunger](#), [Prof. Hugues de Riedmatten](#)

12:20pm

Entangled two-photon absorption and the quantum advantage in sensing

» [Mr. Dmitry Tabakaev](#), [Dr. Matteo Montagnese](#), [Dr. Géraldine Haack](#), [Dr. Luigi Bonacina](#), [Prof. Jean-Pierre Wolf](#), [Prof. Hugo Zbinden](#), [Dr. Robert Thew](#)

12:35pm

Lunch & Networking

Networking & Break Area

1:30pm

Quantum technology

Bluefors Room

Chaired by: Prof. Pepijn Pinkse



Continued from **Monday, 2 November**

- 1:30pm **Laser engineering of quantum devices based on coherent colour centres in diamond**
 » [Mr. Ben Griffiths](#), Mr. Laiyi Weng, Mr. Andrew Kirkpatrick, Mr. Guangzhao Chen, Dr. Patrick Salter, Prof. Martin Booth, Prof. Jason Smith
- 1:45pm **On-chip cryogenic refrigerator for quantum devices**
 » [Dr. Janne Lehtinen](#), Dr. Alberto Ronzani, Dr. Emma Mykkänen, Dr. Antti Kemppinen, Dr. Leif Grönberg, Dr. Antti Manninen, Prof. Mika Prunnila
- 2pm **Multiple suspended photonic crystal membranes in AlGaAs heterostructures for integrated cavity optomechanics**
 » Mr. Sushanth Kini Manjeshwar, Dr. Anastasiia Glushkova, Dr. Jamie Fitzgerald, Prof. Shu Min Wang, Prof. Philippe Tassin, [Prof. Witlef Wieczorek](#)
- 2:15pm **How optical penetration in mirrors codetermines the resonances in open microcavities**
 » [Prof. Martin P. van Exter](#), Mr. Corné Koks
- 2:30pm **Single-shot fabrication of semiconducting-superconducting nanowire devices**
 » [Mr. Francesco Borsoi](#), Dr. Greg Mazur, Mr. Nick van Loo, Dr. Michał Nowak, Dr. Leo Bourdet, Dr. Kongyi Li, Dr. Svetlana Korneychuk, Dr. Alexandra Fursina, Dr. Elvedin Memisevic, Ms. Ghada Badawy, Dr. Sasa Gazibegovic, Dr. Kevin van Hoogdalem, Prof. Erik Bakkers, Prof. Leo Kouwenhoven, Dr. Sebastian Heedt, Dr. Marina Quintero-Pérez
- 2:45pm **Quantum Technology Competence Center (QTZ) at Physikalisch-Technische Bundesanstalt**
 » [Dr. Nicolas Spethmann](#)

1:30pm **Ultra-cold atoms**
Kiutra Room
 Chaired by: Prof. Leticia Tarruell

- 1:30pm **Quantum correlations between spatially separated Bose-Einstein condensates**
 » [Mr. Paolo Colciaghi](#), Ms. Yifan Li, Prof. Philipp Treutlein, Dr. Tilman Zibold
- 1:45pm **A steady-state Bose-Einstein condensate of ultracold atoms**
 » Dr. Chun-Chia Chen, Mr. Rodrigo González Escudero, Dr. Jiří Minář, [Dr. Benjamin Pasquiou](#), Dr. Shayne Bennetts, Prof. Florian Schreck
- 2pm **Producing and storing spin-squeezed states in 1D optical lattice**
 » [Dr. Marcin Plodzien](#), Mr. Maciej Koscielski, Dr. Emilia Witkowska, Prof. Alice Sinatra
- 2:15pm **Extending coherence in matter-wave interferometers of levitated nanoparticles**
 » [Dr. Julen Simon Pedernales](#), Dr. Francesco Cosco, Prof. Gavin W. Morley, Prof. Martin B. Plenio
- 2:30pm **Emergence of pairing in systems of several ultra-cold particles of different mass**
 » [Dr. Tomasz Sowiński](#)
- 2:45pm **Quantum droplets in 1D optical lattices**
 » Mr. Ivan Morera Navarro, Dr. Grigori E. Astrakharchik, Dr. Artur Polls, [Dr. Bruno Julia-Diaz](#)

1:30pm **Quantum networks and repeaters 1**
ID Quantique Room
 Chaired by: Prof. Jürgen Eschner

- 1:30pm **Entanglement between a telecom photon and a spin-wave solid-state multimode quantum memory**
 » [Ms. Jelena V Rakonjac](#), Mr. Dario Lago-Rivera, Dr. Alessandro Seri, Dr. Margherita Mazzera, Dr. Samuele Grandi, Prof. Hugues de Riedmatten
- 1:45pm **Towards quantum networks with erbium dopants**
 » Mr. Benjamin Merkel, Mr. Lorenz Weiß, Mr. Andreas Gritsch, Mr. Pablo Cova Farina, Mr. Alexander Ulanowski, [Dr. Andreas Reiserer](#)



Continued from **Monday, 2 November**

2pm **Indistinguishable photons from a trapped-ion quantum network node**
 » Mr. Martin Meraner, Dr. Azadeh Mazloom, Dr. Viktor Krutianskii, Mr. Vojtech Krcmarsky, Mr. Josef Schupp, Mr. Dario Fioretto, Dr. Pavel Sekatski, Prof. Tracy Northup, Prof. Nicolas Sangouard, Dr. ben lanyon

2:15pm **A trusted node-free eight-user metropolitan quantum communication network**
 » Dr. Siddarth K. Joshi, Dr. Djeylan Aktas, Mr. Soeren Wengerowsky, Dr. Martin Lončarić, Mr. Sebastian Philipp Neumann, Dr. Bo Liu, Dr. Thomas Scheidl, Dr. Guillermo Currás Lorenzo, Mr. Željko Samec, Mr. Laurent Kling, Mr. Alex Qiu, Prof. Mohsen Razavi, Dr. Mario Stipčević, Prof. John G. Rarity, Dr. Rupert Ursin

2:30pm **Microwave to optics conversion using mechanical oscillators**
 » Prof. Simon Groeblacher, Mr. Moritz Forsch, Dr. Robert Stockill

3pm **Break & Networking**
Networking & Break Area

3:20pm **Flash Session 1A**
Bluefors Room
 Chaired by: Dr. Vasilij Makhalov

Experimental proof of Quantum Zeno-assisted Noise Sensing
 » Mrs. Ivana Mastroserio, Prof. Francesco Cataliotti, Ms. Hoang-Van Do, Mr. Cosimo Lovecchio, Dr. Nicole Fabbri, Mr. Stefano Gherardini, Dr. Matthias M. Müller, Mr. Nicola Dalla Pozza, Prof. Filippo Caruso

An Efficient Unstructured Search Algorithm for NISQ Era Quantum Computers
 » Dr. Wojciech Burkot

Roadmap to RbSr dipolar rovibronic ground-state molecules
 » Mr. Premjith Thekkeppatt

Theory of Machine Learning Based on Quantum Mechanics

» Dr. Huber Nieto-Chaupis

A programmable Rydberg quantum simulator

» Mr. Alexander Urech, Mr. Thies Plassmann, Mr. Ivo Knottnerus, Prof. Florian Schreck, Dr. Robert Spreuw

Quantum walk and bend-free coupling in commensurable waveguide arrays

» Dr. Iovana Petrovic

3:20pm **Flash Session 2A**

Kiutra Room

Chaired by: Dr. Samuele Grandi

Realization of Universal Quantum Gates with Spin-Qudits in Colloidal Quantum Dots

» Dr. Fabrizio Moro, Prof. Amalia Patanè, Prof. Lyudmila Turyanska, Prof. Alistair J. Fielding

A quantum theory of triboelectricity

» Prof. Alejandro Jenkins, Prof. Robert Alicki

Quantum photocell based on GaN quantum dots

» Dr. Vishvendra Singh Poonia, Mr. Abhishek Chakraborty

Closing the spin polarization loop of NV(-) – the role of pseudo Jahn-Teller interaction in the spin selective decay

» Dr. Gergő Thiering, Prof. Adam Gali

Compact Silicon Technology based Quantum Random Number Generators

» Dr. Nicola Massari, Dr. Georg Pucker, Dr. Leonardo Gasparini, Dr. Nicola Zorzi, Dr. Fabio Acerbi, Dr. Claudio Piemonte, Dr. Matteo Perenzoni, Dr. Alessandro Tomasi, Dr. Zahra Bisadi, Dr. Enrico Moser, Mr. Giorgio Fontana, Dr. Alessio Meneghetti, Prof. Lorenzo Pavesi



Continued from **Monday, 2 November**

Effect of wells thickness disorder on the quantum magneto-transport properties in GaAs/AlxGa1-xAs multi-quantum wells near wavelength infrared detector

» Dr. Melkoud Samir, [Prof. Abdelhakim Nafidi](#), Dr. Merieme Benaadad, Dr. Nassima Benchtaber, Dr. Driss Barkissy

3:50pm

Flash Session 1B

Bluefors Room

Chaired by: Dr. Vasilij Makhalov

A Faster Objective Function for Making Quantum Circuits Nearest Neighbour Compliant

» [Mr. Leo Rogers](#), Dr. John McAllister

Universal Gate-Set for Continuous-Variable Quantum Computation with Microwave Circuits

» [Mr. Timo Hillmann](#), Dr. Fernando Quijandría, Dr. Giulia Ferrini, Dr. Göran Johansson, Dr. Simone Gasparinetti, Prof. Alessandro Ferraro

Mapping graph state orbits under local complementation

» [Dr. Jeremy Adcock](#), Dr. Sam Morley-Short, Mr. Axel Dahlberg, Dr. Joshua Silverstone

Quantum-classical mechanics as an alternative to quantum mechanics for a broad audience

» [Prof. Vladimir V. Egorov](#)

Solving the travelling salesman problem through variational Monte Carlo

» [Mr. Vladimir Vargas-Calderón](#), Mr. Nicolas Parra-A., Prof. Herbert Vinck-Posada, Prof. Fabio A. González

Analytical view on tunable electrostatic quantum swap gate in tight-binding model

» [Dr. Krzysztof Pomorski](#)

3:50pm

Flash Session 2B

Kiutra Room

Chaired by: Dr. Samuele Grandi

Heralded single photon absorption by nitrogen-vacancy centers in diamond

» [Mrs. Maria Gieysztor](#), Mrs. Marta Misiaszek, Mrs. Joscelyn van der Veen, Prof. Wojciech Gawlik, Prof. Fedor Jelezko, Dr. Piotr Kolenderski

Single trapped atoms coupled to crossed fiber cavities

» [Dr. Pau Farrera](#), Mr. Manuel Brekenfeld, Mr. Dominik Niemietz, Dr. Joseph Dale Christesen, Prof. Gerhard Rempe

Room Temperature Rubidium cells for photon-photon processing

» [Mr. steven sagona-stopfel](#), Mr. dounan Du, Prof. Eden Figueroa

Towards quantum networks with group IV colour centres in diamond

» [Ms. Cathryn Michaels](#), Dr. Matthew Trusheim, Mr. Romain Debroux, Mr. Luca Huber, Mr. Noel Wan, Mr. Lorenzo De Santis, Dr. Carola Purser, Dr. Dorian Gangloff, Prof. Dirk Englund, Prof. Mete Atature

Quantum Memories suited for Space

» [Ms. Luisa Esguerra Rodriguez](#), Mr. Leon Meßner, Dr. Janik Wolters

MHz bandwidth source of single photons tuned to Rubidium transition

» [Ms. Sonali Gera](#), Mr. steven sagona-stopfel, Prof. Eden Figueroa

4:20pm

Break & Networking

Networking & Break Area

4:30pm

Plenary Session

Bluefors Room

Chaired by: Dr. Thierry Lahaye

4:30pm

Bose-Einstein condensates with chiral interactions

» [Prof. Leticia Tarruell](#)



Continued from **Monday, 2 November**

5:15pm **Linking up trapped-ion quantum computers**
» [Prof. Tracy Northup](#)

6pm **Networking**
Networking & Break Area

Tuesday, 3 November

8:40am **Technical Support (if needed)**
Welcome Desk & Chat

9am **Plenary Session**
Bluefors Room
Chaired by: Prof. Christine Silberhorn

9am **How long until a quantum repeater?**
» [Prof. Wolfgang Tittel](#)

9:45am **Developing practical quantum computers with trapped ions**
» [Prof. Winfried Hensinger](#)

10:30am **Break & Networking**
Networking & Break Area

10:50am **Quantum Communication 2**
Bluefors Room
Chaired by: Prof. Wolfgang Tittel

10:50am **Developing a CubeSat for augmenting future QKD networks.**
» [Dr. Sonali Mohapatra](#), Dr. Daniel Oi, Dr. Steve Greenland, Ms. Cassandra Mercury, Mr. Doug McNeil

11:05am **Everlasting Secure Key Agreement with performance beyond QKD in a Quantum Computational Hybrid security model**
» [Mr. Nilesh Vyas](#), Dr. Romain Alléaume

11:20am **Post-selection-free time-bin entanglement: first experimental realization and future developments**
» [Dr. Francesco Vedovato](#), Mr. Costantino Agnesi, Dr. Marco Tomasin, Mr. Marco Avesani, Prof. Jan-Ake Larsson, Prof. Giuseppe Vallone, Prof. Paolo Villoresi

11:35am **Generation of entangled photon pairs from quantum dots in self-aligned broadband cavities**
» [Dr. Laia Gines](#), Mr. Carlo Pepe, Mr. Junior Gonzales, Prof. Niels Gregersen, Prof. Sven Höfling, Prof. Christian Schneider, Prof. Ana Predojevic

11:50am **Integrated pump filtering towards on-chip source of photon pairs**
» [Dr. Dorian Oser](#), Prof. Sébastien Tanzilli, Dr. Florent Mazeas, Dr. Carlos Alonso-Ramos, Mr. Xavier Leroux, Mr. Grégory Sauder, Mr. Xin Hua, Prof. Olivier Alibart, Prof. Laurent Vivien, Prof. Éric Cassan, Prof. Laurent Labonté

12:05pm **Experimental demonstration of robust quantum steering**
» [Dr. Sabine Wollmann](#), Dr. Roope Uola, Dr. Ana Costa

10:50am **Quantum Processing 1**
Kiutra Room
Chaired by: Prof. Winfried Hensinger

10:50am **Photon-atom gates for hybrid quantum information processing**
» [Prof. Barak Dayan](#)

11:20am **Repetitive Quantum Non-demolition Measurement and Soft Decoding of a Silicon Spin Qubit**
» [Mr. Xiao Xue](#), Dr. Benjamin D'Anjou, Dr. Thomas Watson, Dr. Dan Ward, Dr. Don Savage, Prof. Max Lagally, Dr. Mark Friesen, Prof. Susan Coppersmith, Prof. Mark Eriksson, Prof. William Coish, Prof. Lieven Vandersypen



Continued from **Tuesday, 3 November**

11:35am **Deep learning enhanced individual nuclear spin detection and localization in complex electron-nuclear spin registers**

» [Mr. Kyunghoon Jung](#), Mr. Mohamed Abobeih, Mr. Jiwon Yun, Mr. Gyunghun Kim, Mr. Hyunseok Oh, Mr. Henry Ang, Prof. Tim Taminiau, Prof. Dohun Kim

11:50am **Efficient qubit routing for a globally connected trapped ion quantum computer**

» [Mr. Mark Webber](#), Dr. Steven Herbert, Dr. Sebastian Weidt, Prof. Winfried Hensinger

12:05pm **Trapped ion quantum logic with integrated optics**

» [Mr. Maciej Malinowski](#), Dr. Karan Mehta, Mr. Chi Zhang, Dr. Thanh Long Nguyen, Mr. Martin Stadler, Prof. Jonathan Home

12:20pm **Designing high-fidelity gates for neutral-atom quantum computing**

» [Ms. Archismita Dalal](#), Mr. Barry Sanders

10:50am **Quantum Simulation**

ID Quantique Room

10:50am **Studying quantum many-body physics using Rydberg atom arrays**

» [Dr. Thierry Lahaye](#)

11:20am **Laser trapping of long-lived circular Rydberg atoms in a cryogenic environment**

» [Dr. Maxime Favier](#), Mr. Rodrigo Cortinas, Mr. Brice Ravon, Mr. Paul Mehaignerie, Mr. Yohann Machu, Prof. Jean-Michel Raimond, Dr. Clément Sayrin, Dr. Michel Brune

11:35am **Simulating open quantum systems using quantum Zeno dynamics**

» [Ms. Sabrina Patsch](#), Prof. Sabrina Maniscalco, Prof. Christiane Koch

11:50am **Tracking the winding number in quenched dynamics of chiral one-dimensional systems**

» [Dr. Alexandre Dauphin](#)

12:05pm **Quantum synchronization in dimer atomic lattices**

» [Mr. Albert Cabot](#), Dr. Gian Luca Giorgi, Dr. Fernando Galve, Dr. Roberta Zambrini

12:20pm **Simulating twistrionics without a twist**

» Dr. Debraj Rakshit, [Mr. Tymoteusz Salamon](#)

12:35pm **Lunch & Networking**

Networking & Break Area

1:30pm **Flash Session 1A**

Bluefors Room

Chaired by: Dr. Diana Serrano

Elements of scaling for ion-trap quantum computing.

» [Mrs. chiara decaroli](#), Mr. Roland Matt, Dr. Christopher Axline, Mr. Robin Oswald, Prof. Jonathan Home

Fabrication of an ion trap - cavity module for quantum networks

» [Mr. Martin Wagener](#), Dr. Thomas Lutz, Mr. Simon Ragg, Mrs. chiara decaroli, Prof. Jonathan Home

Analytic view on N body interaction in electrostatic quantum gates and decoherence effects in tight-binding model

» [Dr. Krzysztof Pomorski](#)

Fiber-based ion trap integrated with a high-finesse fiber cavity

» [Mr. Xingyu Bao](#), [Prof. Jinming Cui](#)

Rare-Earth Mixed Crystals for Fast Optical Quantum Computers

» [Prof. Vladimir Hizhnyakov](#), Dr. Vadim Boltrushko, Dr. Helle Kaasik, Prof. Yurii Orlovskii

1:30pm **Flash Session 2A**

Kiutra Room

Chaired by: Dr. Natalia Bruno



Continued from **Tuesday, 3 November**

A differential geometrical approach to entanglement estimation

» [Mrs. Ghofrane Bel Hadj Aissa](#), Dr. Roberto Franzosi

Towards Arrays of Cryogenic Traps for Improved Quantum Simulation

» [Mr. Kai-Niklas Schymik](#), Mrs. Florence Nogrette, Dr. Daniel Barredo, Dr. Antoine Browaeys, Dr. Thierry Lahaye

Extreme laser background suppression for resonant fluorescence of a quantum emitter

» [Ms. meryem benelajla](#)

Hybrid Quantum-Classical Mesh Optimization for solving Partial Differential Equations (PDEs)

» [Mr. Deeptanshu Prasad](#)

Conditional preparation of non-Gaussian quantum optical states by mesoscopic measurement

» [Dr. Alex Davis](#), Dr. Mattia Walschaers, Mr. Paul Renault, Mr. Ganael Roeland, Mr. Thibault Michel, Prof. Valentina Parigi, Prof. Nicolas Treps

Testing Pauli Exclusion Principle for electrons at the LNGS underground laboratory

» [Dr. Luca De Paolis](#)

1:30pm

Flash Session 3A

ID Quantique Room

Chaired by: Dr. Patrick Ledingham

A complete restricted Boltzmann machine on an adiabatic quantum computer

» [Mr. Lorenzo Rocutto](#), Dr. Enrico Prati

Optimal control methods for enhancing the sensitivity and robustness of atom interferometric sensors

» [Mr. Jack Saywell](#), Dr. Max Carey, Prof. Ilya Kuprov, Dr. Tim Freegarde

Enhanced absorption of weak ultrashort light pulses by a narrowband atomic medium

» Mr. Alyson Carvalho, [Dr. Raoni Moreira](#), Dr. José Ferraz, Dr. Sandra Vianna, Dr. Lúcio Acioli, Dr. Daniel Felinto

Coupling of Emission from SiV center in diamond to Si3N4 Photonic Platform

» Dr. Dmitry Kalashnikov, Dr. Victor Leong, Dr. Jibo Dai, Dr. Alagappan Ghandi, Dr. Junrong Ong, Dr. Ting Hu, Dr. Valery Davydov, Dr. Viatcheslav Agafonov, [Dr. Leonid Krivitsky](#)

New materials combining properties of liquid crystals and inorganic semiconductor quantum dots

» Prof. Vladimir Bezborodov, Dr. Sergei Mikhalyonok, Dr. Nina Kuz'menok, Dr. Alexander Ezhov, [Dr. Yaroslav Derikov](#), Dr. Georgy Shandryuk, [Dr. Oleg Karpov](#), Prof. Raisa Talroze

A Hybrid 2D Material/Dye Molecule Quantum Emitter For Quantum Nanophotonics

» [Dr. Sofia Pazzagli](#), Mr. Christian Liedl, Ms. Katherine Herman, Ms. Bitá Rezania, Dr. Nikolai Severin, Prof. Jürgen Rabe, Prof. Arno Rauschenbeutel

2pm

Flash Session 1B

Bluefors Room

Chaired by: Dr. Diana Serrano

The Internet of Quantum Things

» [Dr. Huber Nieto-Chaupis](#)

A Quantum Interior-Point Predictor-Corrector Algorithm for Linear Programming

» [Mr. Pablo Antonio Moreno Casares](#), Prof. Miguel Ángel Martín-Delgado

Mapping a finite and an infinite Hadamard quantum walk onto a unique case of a random walk process.

» [Dr. Arie Bar-Haim](#)



Continued from **Tuesday, 3 November**

Expressibility and trainability of parameterized analog quantum systems for machine learning applications

» Dr. Jirawat Tanpanitanon, [Mr. Supanut Thanasilp](#), Dr. Ninnat Dangniam, Dr. Marc Lemonde, Prof. Dimitrios Angelakis

Analytical view on N bodies interacting with quantumcavity in tight-binding model

» [Dr. Krzysztof Pomorski](#)

Deriving full energy levels by one Subspace-Search Variational Quantum Eigensolver using frame superposition clusters

» [Dr. Hikaru Wakaura](#), Dr. Shoya Yasuda, Dr. Takao Tomono, Mr. Yuichiro Minato

Qubit-efficient encoding schemes for binary optimisation problems

» [Mr. Benjamin Tan](#), [Dr. Marc Lemonde](#), Mr. Supanut Thanasilp, Dr. Jirawat Tanpanitanon, Prof. Dimitrios Angelakis

2pm

Flash Session 2B

Kiutra Room

Chaired by: Dr. Natalia Bruno

Coherent Dynamics in Quantum Emitters under Dichromatic Excitation

» [Mr. ZheXian Koong](#), Dr. Eleanor Scerri, Dr. Markus Rambach, Dr. Moritz Cygorek, Mr. Raphael Picard, Dr. Mauro Brotons-Gisbert, Dr. Yong Ma, Prof. Suk-In Park, Prof. Jin-Dong Song, Dr. Erik Gauger, Prof. Brian Gerardot

Simulatability of CV architectures with bosonic encoding

» Dr. Laura García-Álvarez, [Mr. Cameron Calcluth](#), Prof. Alessandro Ferraro, Dr. Giulia Ferrini

Cavity-based photon-generation schemes using STIRAP re-preparation

» [Mr. Juan Rafael Alvarez Velasquez](#), Dr. Thomas Barrett, Dr. Ezra Kassa, Dr. Axel Kuhn

Benchmarking photon number resolving detectors

» [Prof. Petr Marek](#), Mr. Jan Provaznik, Mr. Lukas Lachman, Prof. Radim Filip

Room Temperature Defect Qubits in Ultrasmall Silicon Carbide Nanocrystals

» [Dr. David Beke](#), Prof. Jan Valenta, Mr. Bence Márkus, Prof. Katalin Kamarás, Dr. Ferenc Simon, Prof. Adam Gali

A new potentially integrable source of on-demand path-entangled GHZ photon triplets

» [Mr. Hallmann Óskar Gestsson](#), Dr. Marc-André Dupertuis

2pm

Flash Session 3B

ID Quantique Room

Chaired by: Dr. Patrick Ledingham

SiV- color centers in nanodiamonds with excellent spectral properties for quantum photonics.

» [Ms. Mackrine Nagra](#), Dr. Lucien Besombes, Dr. Valery Davydov, Dr. Viatcheslav Agafonov, Prof. Robert Taylor, Dr. Christophe Couteau

Optical coherence tomography based on induced coherence with a pulsed pump

» [Mr. Arturo Rojas-Santana](#), Mr. Gerard J. Machado, Dr. Dorilian Lopez-Mago, Dr. Juan P. Torres

Ultrabright photon-pair source based on MgO:LN waveguide chips for quantum fluorescence microscopy

» [Mr. Josué Ricardo León Torres](#), Dr. Markus Gräfe



Continued from **Tuesday, 3 November**

Transients of the quantum light retrieved from Rydberg polaritons.

» [Ms. Auxiliadora Padrón Brito](#), Mr. Roberto Tricarico, Dr. Pau Farrera, Dr. Emanuele Distanto, Dr. Klara Theophilo, Prof. Darrick Chang, Prof. Hugues de Riedmatten

Modeling and Control of a Reconfigurable Photonic Circuit using Deep Learning

» [Dr. Robert Chapman](#), Mr. Akram Youssry, Dr. Christopher Ferrie, Dr. Marco Tomamichel, Dr. Alberto Peruzzo

Measurement-device-independent verification of a quantum memory

» [Mr. Yong Yu](#)

2:30pm

Break & Networking

Networking & Break Area

2:40pm

Quantum Communication 3

Bluefors Room

Chaired by: Prof. Sara Ducci

2:40pm

Advancing satellite-based quantum communication channels

» [Prof. Thomas Jennewein](#)

3:10pm

Quantum weak coin flipping with a single photon

» [Dr. Mathieu Bozzio](#), Dr. Ulysse Chabaud, Prof. Iordanis Kerenidis, Dr. Eleni Diamanti

3:25pm

High-dimensional entanglement in atmospheric turbulence

» [Dr. Giacomo Sorelli](#), Dr. Nina Leonhard, Dr. Vyacheslav Shatokhin, Dr. Claudia Reinlein, Prof. Andreas Buchleitner

3:40pm

In-orbit results of the entangled photon-pair source on a CubeSat

» [Dr. Aitor Villar](#), Dr. Alexander Lohrmann, Dr. Robert Bedington, Prof. Alexander Ling

3:55pm

Advances in daylight free-space and fiber quantum-key-distribution

» [Prof. Giuseppe Vallone](#), Prof. Paolo Villoresi, Mr. Costantino Agnesi, Mr. Marco Avesani, Dr. Luca Calderaro, Ms. Giulio Foletto, Ms. Alessia Scriminich, Dr. Andrea Stanco, Mr. Mujtaba Zahidy, Dr. Francesco Vedovato

4:10pm

High detection rate and high efficiency parallel SNSPDs for high-speed QKD

» [Mr. Perrenoud Matthieu](#), Mr. Misael Caloz, Ms. Emna Amri, Dr. Claire Autebert, Prof. Christian Schoenenberger, Prof. Hugo Zbinden, Dr. Félix Bussi eres

2:40pm

Quantum Networks and repeaters 2

Kiutra Room

Chaired by: Dr. Margherita Mazzera

2:40pm

Spin-photon interfaces for deterministic graph state generation in repeater networks

» [Prof. Sophia Economou](#)

3:10pm

One-way quantum repeater based on near-deterministic photon-emitter interfaces

» [Prof. Johannes Borregaard](#)

3:25pm

All-photonic quantum teleportation and entanglement swapping using on-demand solid-state quantum emitters

» [Dr. Francesco Basso Basset](#), Mr. Michele B. Rota, Mr. Christian Schimpf, Dr. Davide Tedeschi, Dr. Marcus Reindl, Dr. Daniel Huber, Ms. Katharina D. Zeuner, Dr. Saimon F. Covre da Silva, Ms. Huiying Huang, Prof. Val Zwiller, Dr. Klaus D. J ons, Prof. Armando Rastelli, Prof. Rinaldo Trotta

3:40pm

Ultra-bright Source of Indistinguishable Single Photons

» [Dr. Alisa Javadi](#), Mrs. N. Tamm, Mrs. N. Antoniadis, Dr. D. Najer, Dr. M. L obl, Mr. A. Korsch, Dr. R. Schott, Mr. S. valentin, Prof. A. D. Wieck, Dr. A. Ludwig, Prof. Richard J. Warburton



Continued from **Tuesday, 3 November**

- 3:55pm **Quantum Protocol Zoo**
 » Ms. Mina Doosti, Mr. Natansh Mathur, Ms. Rhea Parekh, Ms. Shraddha Singh, Ms. Gözde Ustün, Mr. Bas Dirkse, Ms. Victoria Lipinska, Mr. Jérémy Ribeiro, Dr. Mahshid Delavar, Mr. Niraj Kumar, Ms. Gláucia Murta, Mr. Atul Mantri, Ms. Céline Chevalier, Mr. Harold Ollivier, Mr. Marc Kaplan, Prof. Elham Kashefi
- 4:10pm **Optimized swap operation in quantum networks using realistic quantum memories**
 » Dr. Vladimir Malinovsky, Dr. Siddhartha Santra, Prof. Liang Jiang
- 2:40pm **Quantum sensing and metrology 2**
ID Quantique Room
 Chaired by: Dr. Andreas Reiserer
- 2:40pm **SPAD arrays for quantum imaging**
 » Prof. André Stefanov, Dr. Bänz Bessire, Dr. Manuel Unternährer, Mr. Bruno Eckmann, Dr. Leonardo Gasparini, Dr. Matteo Perenzoni, Dr. Dmitry Lyakhov, Prof. Dominik L. Michels, Mr. Ilya Karuseichyk, Dr. Alexander Mikhalychev, Dr. Anton Sakovich, Prof. Dmitri Mogilevtsev
- 2:55pm **Optical coherence tomography based on induced coherence in the high parametric gain regime**
 » Mr. Gerard J. Machado, Mr. Gaetano Frascella, Dr. Juan P. Torres, Dr. Maria Chekhova
- 3:10pm **Experimental application of optimised Raman pulses for atom-interferometric sensors**
 » Dr. Max Carey, Mr. Jack Saywell, Prof. Ilya Kuprov, Dr. Tim Freegarde
- 3:25pm **Demonstration of spin squeezing in an optical clock transition**
 » Dr. Simone Colombo, Dr. Edwin Pedrozo Penafiel, Mr. Chi Shu, Dr. Albert Adiyatullin, Mr. Zeyang Li, Mr. Enrique Mendez, Dr. Akio Kawasaki, Dr. Boris Braverman, Prof. Vladan Vuletic

- 3:40pm **Can super-resolution optical fluctuation imaging (SOFI) provide infinite resolution?**
 » Dr. Alexander Mikhalychev, Ms. Svetlana Vlasenko, Mr. Ilya Karuseichyk, Dr. Dmitry Lyakhov, Prof. Dominik L. Michels, Prof. Dmitri Mogilevtsev
- 3:55pm **Real-time, adaptive quantum sensing with the quantum orchestration platform**
 » Dr. Yonatan Cohen, Mr. Niv Drucker, Mr. Nir Halay, Dr. Amit Finkler, Mrs. Inbar Zohar, Dr. Christian Bonato
- 4:10pm **Generation of Nitrogen-Vacancy Ensembles in Diamond for Quantum Sensors: Optimisation and Scalability of CVD Processes**
 » Mr. Pierre-Olivier Colard, Dr. Andrew Edmonds, Dr. Matthew Markham
- 4:25pm **Break & Networking**
Networking & Break Area
- 4:45pm **Plenary Session**
Bluefors Room
 Chaired by: Prof. Thomas Jennewein
- 4:45pm **Highly-efficient ensemble-based quantum memory for light**
 » Prof. Julien Laurat
- 5:30pm **Generation of pure quantum light in the solid-state**
 » Prof. Pascale SENELLART
- 6:15pm **Networking**
Networking & Break Area

Wednesday, 4 November

- 8:40am **Technical Support (if needed)**
Welcome Desk & Chat



Continued from **Wednesday, 4 November**

- 9am **Quantum Optics 1**
Bluefors Room
Chaired by: Prof. Johannes Borregaard
- 9am **Generation and manipulation of quantum states of light with AlGaAs chips**
» [Prof. Sara Ducci](#)
- 9:30am **A three-dimensional polymeric platform for photonic quantum technologies**
» [Mrs. maja colautti](#), Dr. Pietro Lombardi, Mr. Marco Trapuzzano, Mr. Francesco Piccioli, Dr. Sofia Pazzagli, Dr. Bruno Tiribilli, Dr. Sara Nocentini, Prof. Francesco Cataliotti, Prof. Diederik Wiersma, Dr. costanza toninelli
- 9:45am **A new route for practical sources of on-demand GHZ photon triplets**
» [Dr. Marc-André Dupertuis](#), Mr. Raphael Faerber, Mr. Hallmann Óskar Gestsson, Mr. Vincent Bossel, Dr. Daniel Oberti
- 10am **Manipulation of polarization-entangled photons with ultrathin metasurfaces**
» Mr. Shaun Lung, Dr. Jihua Zhang, Dr. Kai Wang, Mr. Khosro Zangeneh Kamali, Dr. Mohsen Rahmani, Prof. Dragomir Neshev, [Prof. Andrey Sukhorukov](#)
- 10:15am **Wigner negativity in the steady-state output of a Kerr parametric oscillator**
» [Ms. Ingrid Strandberg](#), Dr. Göran Johansson, Dr. Fernando Quijandría
- 10:30am **Generation and detection of polarization entanglement at 2.1 micron**
» [Mr. Taylor Shields](#), Dr. Adetunmise Dada, Dr. Shashi Prabhakar, Mr. Mehdi Ebrahim, Dr. Gregor G. Taylor, Dr. Dmitry Morozov, Dr. Kleanthis Erotokritou, Dr. Shigehito Miki, Dr. Masahiro Yabuno, Dr. Hirotaka Terai, Dr. Corin Gawith, Dr. Michael Kues, Dr. Lucia Caspani, Prof. Robert H. Hadfield, Dr. Matteo Clerici

- 9am **Device independent quantum information**
Kiutra Room
Chaired by: Prof. Antonio Acin
- 9am **Device-independent certification of a quantum memory**
» [Dr. Jean-Daniel Bancal](#), Dr. Pavel Sekatski, Dr. Sebastian Wagner, Prof. Nicolas Sangouard
- 9:15am **Self-testing quantum systems of arbitrary local dimension with minimal number of measurements**
» [Mr. Shubhayan Sarkar](#), Dr. Debashis Saha, Dr. Jędrzej Kaniewski, Prof. Remigiusz Augusiak
- 9:30am **Symmetric hidden state model for trust-less entanglement witness**
» [Dr. Debasis Mondal](#), Dr. Dagomir Kaszlikowski
- 9:45am **Certified quantum randomness from untrusted light**
» [Dr. Nathan Walk](#), Dr. David Drahi, Dr. Matty Hoban, Dr. W. Steven Kolthammer, Dr. Josh Nunn, Prof. Jonathan Barrett, Prof. Ian Walmsley
- 10am **Semi-Device-Independent QRNG based on the overlap assumption and heterodyne detection**
» [Dr. Hamid Tebyanian](#), Mr. Marco Avesani, Prof. Giuseppe Vallone, Prof. Paolo Villoresi
- 10:15am **Scalable device-independent certification of many-body entanglement using statistical inference**
» [Prof. Tommaso Roscilde](#), Dr. Irénée Frérot
- 10:30am **Measuring the quality of boson samplers in the sparse regime**
» [Dr. Jelmer Renema](#), Mr. Hui Wang, Mr. Jian Qin, Mr. Xiang You, Prof. Chaoyang Lu, Prof. Jianwei Pan
- 9am **Quantum Light Matter interfaces**
ID Quantique Room
Chaired by: Prof. Julien Laurat



Continued from **Wednesday, 4 November**

9am **Solid-state spin-wave quantum memories for quantum repeaters**
» [Dr. Mikael Afzelius](#)

9:30am **On-demand quantum memory for photonic qubits based on an on-chip waveguide**
» [Prof. Zong-Quan Zhou](#)

9:45am **Atomic Frequency Comb Memory in a Room Temperature Alkali Vapour**
» [Dr. Patrick Ledingham](#), Mr. Dougal Main, Dr. Khabat Heshami, Mr. Thomas Hird, Prof. Ian Walmsley

10am **On-demand generation of spin defects in silicon carbide**
» [Dr. Jin-Shi Xu](#)

10:15am **Coherent optical storage in rare-earth doped nanoparticles**
» [Dr. Diana Serrano](#), Dr. Alexandre Fossati, Dr. Shuping Liu, Dr. Alexandre Tallaire, Dr. Alban Ferrier, Dr. Philippe Goldner

10:30am **Controlling the temporal wave function of a single photon**
» [Mr. Philip Thomas](#), Dr. Olivier Morin, Mr. Matthias Körber, Mr. Stefan Langenfeld, Prof. Gerhard Rempe

10:45am **Break & Networking**
Networking & Break Area

11am **Quantum Optics 2**
Bluefors Room
Chaired by: Prof. Martin P. van Exter

11am **Quantum Non-Gaussian Optics and Mechanics**
» [Prof. Radim Filip](#)

11:30am **Quantum negativity provides advantage in postselected metrology**
» [Dr. David Arvidsson-Shukur](#), Dr. Nicole Yunger Halpern, Mr. Hugo Lepage, Mr. Aleksander Lasek, Prof. Crispin Barnes, Prof. Seth Lloyd

11:45am **Efficient generation of high-dimensional entanglement via path identity**
» [Mr. Jaroslav Kysela](#), Mr. Manuel Erhard, Mr. Armin Hochrainer, Dr. Mario Krenn, Prof. Anton Zeilinger

12pm **Robust universal linear optics**
» [Dr. Mikhail Saygin](#), Mr. Ivan Dyakonov, Mr. Ilya Kondratyev, Dr. Stanislav Straupe, Prof. Sergei Kulik

12:15pm **Relating quadrature coherence scale, fast decoherence and entanglement**
» [Prof. Stephan De Bievre](#), Dr. Anaëlle Hertz, Prof. Nicolas Cerf

12:30pm **Space-time coherence of parametric down-conversion under anomalous group-velocity dispersion**
» [Ms. Paula Cutipa Gimenez](#), Dr. Denis Kopylov, Dr. Maria Chekhova

11am **Quantum Processing 2**
Kiutra Room
Chaired by: Prof. Barak Dayan

11am **Quantum supremacy in driven quantum many-body systems**
» Dr. Jirawat Tanpanitanon, Mr. Supanut Thanasilp, Dr. Ninnat Dangniam, Dr. Marc Lemonde, [Prof. Dimitrios Angelakis](#)

11:15am **Encoding logical qubits in a silicon photonic quantum processor**
» [Dr. Caterina Vigliar](#), Dr. Stefano Paesani, Dr. Yunhong Ding, Dr. Jeremy Adcock, Dr. Jianwei Wang, Dr. Sam Morley-Short, Dr. Davide Bacco, Prof. Leif Katsuo Oxenløwe, Prof. Mark G. Thompson, Prof. John G. Rarity, Prof. Anthony Laing

11:30am **Fast differentiable evolution of quantum states under Gaussian transformations**
» [Ms. Yuan YAO](#), Prof. Filippo Miatto



Continued from **Wednesday, 4 November**

- 11:45am **A continuous Rosenblatt quantum perceptron**
» [Mr. marco maronese](#), Dr. Enrico Prati
- 12pm **Gaussian states provide universal and versatile quantum reservoir computing**
» [Dr. Johannes Nokkala](#), Mr. Rodrigo Martínez-Peña, Dr. Gian Luca Giorgi, Prof. Valentina Parigi, Dr. Miguel Soriano, Dr. Roberta Zambrini
- 12:15pm **Universal quantum computation and quantum error correction with ultracold atomic mixtures**
» [Dr. Valentin Kasper](#), Mr. Daniel González-Cuadra, Dr. Alexandre Dauphin, Dr. Felix Huber, Ms. Apoorva Hegde, Mr. Andy Xia, Prof. Fred Jendrzejewski, Prof. Maciej Lewenstein, Prof. Philipp Hauke
- 12:30pm **3D Topological Quantum Computing**
» [Dr. Torsten Asselmeyer-Maluga](#)
- 11am **Fundamental Quantum Science 1**
ID Quantique Room
Chaired by: Prof. Nicolas Sangouard
- 11am **The Quantum Marginal Problem for Symmetric States: Applications to Variational Optimization, Nonlocality and Self-Testing**
» Mr. Albert Aloy, Dr. Matteo Fadel, [Dr. Jordi Tura Brugués](#)
- 11:15am **Probabilistic storage and retrieval of qubit phase gates**
» [Dr. Michal Sedlak](#), Dr. Mario Ziman
- 11:30am **Universal spectral features of ultrastrongly coupled systems**
» [Dr. Alexandre Le Boité](#), Dr. Simone Felicetti
- 11:45am **Critical Quantum Metrology with Finite-Component Quantum Phase Transitions**
» Dr. Louis Garbe, Dr. Matteo Bina, Prof. Arne Keller, Prof. Matteo Paris, [Dr. Simone Felicetti](#)

- 12pm **Quantum coherent control of N channels : communication enhancement in an indefinite causal order scenario**
» [Dr. Lorenzo M. Procopio](#), Mr. Francisco Delgado, Mr. Marco Enríquez, Dr. Nadia Belabas, Prof. Juan Ariel Levenson
- 12:15pm **Quantum Physical Unclonable Functions: Possibilities and Impossibilities**
» [Ms. Mina Doosti](#), Dr. Mahshid Delavar, Dr. Myrto Arapinis, Prof. Elham Kashefi
- 12:45pm **Lunch & Networking**
Networking & Break Area
- 1:30pm **Quantum Optics 3**
Bluefors Room
Chaired by: Prof. Stephan Goetzinger
- 1:30pm **Wigner-negativity through Einstein-Podolsky-Rosen steering**
» [Dr. Mattia Walschaers](#), Prof. Nicolas Treps
- 1:45pm **SPAD array camera as a photon-number-resolving detector for phase-imaging**
» [Mr. Robin Camphausen](#), Dr. Álvaro Cuevas, Dr. Valerio Pruneri
- 2pm **The array of nonlinear waveguides: a versatile entanglement synthesizer**
» [Dr. David Barral Raña](#), Dr. Mattia Walschaers, Dr. Kamel Bencheikh, Prof. Valentina Parigi, Prof. Juan Ariel Levenson, Prof. Nicolas Treps, Dr. Nadia Belabas
- 2:15pm **Quantum receivers for resource-efficient telecommunication**
» [Dr. Sergey Polyakov](#)
- 2:30pm **Experimental quantum reading of a digital memory**
» Mr. Giuseppe Ortolano, [Dr. ivano Ruo-Berchera](#), Dr. Elena Losero, Prof. Stefano Pirandola, Prof. Marco Genovese



Continued from **Wednesday, 4 November**

- 2:45pm **Investigation of Stark shift and charge noise on a centrosymmetric diamond defect**
» [Dr. Lorenzo De Santis](#), Dr. Matthew Trusheim, Mr. Kevin Chen, Prof. Dirk Englund
- 3pm **Cavity-enhanced Raman scattering for in situ alignment and characterization of solid-state microcavities**
» [Mr. Sigurd Flågan](#), Dr. Daniel Riedel, Dr. Brendan J. Shields, Ms. Viktoria Yurgens, Dr. Tomasz Jakubczyk, Prof. Patrick Maletinsky, Prof. Richard J. Warburton
- 1:30pm **Fundamental quantum science 2**
Kiutra Room
Chaired by: Dr. Jean-Daniel Bancal
- 1:30pm **Unsupervised phase discovery with deep anomaly detection**
» [Mr. Korbinian Kottmann](#), Mr. Patrick Hübner, Prof. Maciej Lewenstein, Prof. Antonio Acín
- 1:45pm **Tight bounds on the simultaneous estimation of incompatible parameters**
» [Dr. Jasinder Sidhu](#)
- 2pm **Experimental neural network enhanced quantum tomography**
» Mr. Adriano Macarone Palmieri, Mr. Egor Kovlakov, Dr. Federico Bianchi, Dr. Dmitry Yudin, [Dr. Stanislav Straupe](#), Prof. Jacob Biamonte, Prof. Sergei Kulik
- 2:15pm **Experimental analysis of superdiffusive transition dynamics in a disordered photonic Quantum Walk**
» Mr. Andrea Gherardi, [Mr. Alessandro Laneve](#), Mr. Luis Diego Bonavena, Dr. Linda Sansoni, Dr. José Ferraz, Prof. Andrea Fratalocchi, Prof. Fabio Sciarrino, Dr. Álvaro Cuevas, Prof. Paolo Mataloni
- 2:30pm **Quantum-Assisted Optical Interferometers**
» [Dr. Andrei Nomerotski](#)

- 2:45pm **Application of Quantum Machine Learning to High Energy Physics Analysis at LHC using IBM Quantum Computer Simulators and IBM Quantum Computer Hardware**
» Prof. Sau Lan WU, Prof. Livny Miron, Dr. Federico Carminati, Dr. Alberto Di Meglio, Dr. Panagiotis Barkoutsos, Dr. Ivano Tavernelli, Dr. Stefan Wörner, Dr. Andy C. Y. Li, Prof. Joseph Lykken, Dr. Panagiotis Spentzouris, [Mr. Shaojun Sun](#), Dr. Jennifer R. Glick
- 3pm **Application of Quantum Machine Learning to High Energy Physics Analysis at LHC**
» Prof. Sau Lan WU, [Dr. Wen Guan](#), Dr. Chen Zhou, Mr. Shaojun Sun
- 1:30pm **Quantum Networks and repeaters 3**
ID Quantique Room
Chaired by: Dr. Mikael Afzelius
- 1:30pm **Interfacing and entangling single atoms and single telecom photons**
» [Prof. Jürgen Eschner](#), Dr. Stephan Kucera, Mr. Jan Arenskoetter, Mr. Matthias Kreis, Prof. Christoph Becher, Mr. Matthias Bock
- 2pm **Long-distance distribution of atom-photon entanglement at telecom wavelength**
» [Mr. Matthias Bock](#), Mr. Tim van Leent, Mr. Robert Garthoff, Mr. Kai Redeker, Mr. Wei Zhang, Mr. Tobias Bauer, Mr. Wenjamin Rosenfeld, Prof. Christoph Becher, Prof. Harald Weinfurter
- 2:15pm **Heralded entanglement between spatially separated multimode solid-state quantum memories**
» [Mr. Dario Lago-Rivera](#), Dr. Samuele Grandi, Ms. Jelena V Rakonjac, Dr. Alessandro Seri, Prof. Hugues de Riedmatten
- 2:30pm **Quantum Network using Nitrogen-Vacancy centres as Nodes**
» [Ms. Sophie Hermans](#), Mr. Matteo Pompili, Dr. Simon Baier, Mr. Hans Beukers, Prof. Ronald Hanson
- 2:45pm **Entanglement of two quantum memories via fiber transmission over dozens of kilometers**
» [Mr. Yong Yu](#)



Continued from **Wednesday, 4 November**

3pm **Building an entanglement-sharing quantum repeater network**
 » [Prof. Eden Figueroa](#), Mr. Mael Flament, Ms. Sonali Gera, Mr. Steven Sagona, Dr. Mehdi Namazi, Dr. Paul Stankus, Dr. Dimitrios Katramatos

3:15pm **Break & Networking**
Networking & Break Area

3:35pm **Flash Session 1A**
Bluefors Room

Storing single photons in a room temperature vapor cell
 » [Mr. Roberto Mottola](#), Mr. Gianni Buser, Dr. Janik Wolters, Mr. Chris Müller, Mr. Tim Kroh, Dr. Sven Ramelow, Prof. Oliver Benson, Prof. Philipp Treutlein

Indistinguishable sources of telecom and quantum memory-compatible photon pairs: towards a quantum repeater testbed
 » [Mr. Dario Lago-Rivera](#), Dr. Samuele Grandi, Prof. Hugues de Riedmatten

Effects of hyperfine structure on atomic frequency comb formation and pulse storage in Pr:YSO
 » [Dr. Aditya Sharma](#), Mr. Martin Ritter, Dr. Zachary Levine, Mr. Eli Weissler, Dr. Elizabeth Goldschmidt, Dr. Alan Migdall

Segmented ion trap with integrated fiber cavity
 » [Dr. Stephan Kucera](#), Mr. Omar Elshehy, Prof. Jürgen Eschner

Using cavity QED to create single photons and optical cat-states
 » [Mr. Lukas Hartung](#), Mr. Severin Daiss, Dr. Bastian Hacker, Dr. Stephan Welte, Dr. Emanuele Distante, Prof. Gerhard Rempe

A cold atom temporally multiplexed quantum memory with cavity-enhanced noise suppression
 » [Mr. Lukas Heller](#), Dr. Pau Farrera, Dr. Georg Heinze, Prof. Hugues de Riedmatten

3:35pm **Flash Session 2A**
Kiutra Room
 Chaired by: Prof. André Stefanov

Cooperatively-enhanced precision of hybrid light-matter sensors
 » [Mr. Artur Niezgoda](#), Dr. Jan Chwedeńczuk, Dr. Tomasz Wasak, Dr. Francesco Piazza

Toward a practical quantum current standard
 » [Dr. Antti Kemppinen](#), Dr. Emma Mykkänen, Dr. Janne Lehtinen, Dr. Alberto Ronzani, Dr. Arijit Bera, Ms. Katja Kohopää, Dr. Joonas Govenius, Mr. Pekka Immonen, Dr. Antti Manninen, Prof. Mika Prunnila, Dr. Stephen Giblin, Dr. Masaya Kataoka, Dr. Sebastian de Graaf, Dr. Teresa Hoenigl-Decrinis, Dr. Rais Shaikhaidarov, Dr. Gento Yamahata, Dr. Akira Fujiwara, Mr. Máté Jenei, Prof. Mikko Möttönen

New frontiers of inertial sensing with very long baseline atom interferometry
 » [Dr. Robert Rengelink](#), Mr. Étienne Wodey, Mr. Christian Meiners, Ms. Dorothee Tell, Dr. Klaus Zipfel, Dr. Christian Schubert, Prof. Wolfgang Ertmer, Dr. Dennis Schlippert, Prof. Ernst Rasel

Resolution limits in microscopy with correlated photon pairs
 » [Mrs. Maria Gieysztor](#), Mr. Joshua Nepinak, Dr. Christopher Pugh, Dr. Piotr Kolenderski

Quantum simulation of optoelectronic properties of nanostructures multi quantum wells InAs/GaSb type II LWIR and MWIR infrared detectors
 » Dr. Merieme Benaadad, [Prof. Abdelhakim Nafidi](#), Dr. Melkoud Samir, Prof. Thami Ait-Taleb, Prof. Hassan Chaib

Quantum Absorption Estimation for Saturable Samples
 » [Mr. Jake Biele](#), Dr. Joshua Silverstone, Dr. Jonathan Matthews, Dr. Euan Allen

3:35pm **Flash Session 3A**
ID Quantique Room
 Chaired by: Dr. Bruno Julia-Diaz



Continued from **Wednesday, 4 November**

Quantum Computer simulation improving

» Mr. Hernán Indíbil de la Cruz Calvo, Mr. José Javier Paulet González, Dr. Fernando Cuartero Gómez, Dr. Fernando López Pelayo, Mr. Jesús Andrés Fernández

Theory of quantum simulation of Dirac Delta functions in quantum electrodynamics

» Dr. Huber Nieto-Chaupis

Electrostatic Control and Entanglement of Silicon Qubits in 22nm FDSOI process

» Dr. Panagiotis Giounanlis, Prof. Elena Blokhina, Mr. Andrii Sokolov, Dr. Eugene Koskin, Dr. Imran Bashir, Dr. Dirk Leipold, Mr. Mike Asker, Mr. Ali Esmailian, Dr. Hongying Wang, Dr. Cagri Cetintepe, Prof. Robert Bogdan Staszewski

Lines for improvements on Grover's algorithm

» Mr. José Javier Paulet González, Mr. Hernán Indíbil de la Cruz Calvo, Dr. Fernando López Pelayo, Dr. Fernando Cuartero Gómez, Mr. Jesús Andrés Fernández

Benchmarking 16-element Quantum Search Algorithms on Superconducting Quantum Processors

» Mr. Jan Gwinner, Mr. Marcin Briański, Dr. Wojciech Burkot, Mr. Łukasz Czerwiński, Mr. Vladyslav Hlembotskyi, Mr. Adam Szady

Entanglement Generation in the Thermodynamic Limit

» Dr. Amine CHENTOUF, Prof. Zoubida SAKHI, Prof. Mohamed BENNAI

4:05pm

Flash Session 1B

Bluefors Room

Squeezing beats turbulence in free-space continuous-variable quantum cryptography

» Mr. Ivan Derkach, Dr. Vladyslav Usenko, Prof. Radim Filip

Mid-Infrared balanced detector for quantum light characterization

» Mx. Tecla Gabbrielli, Dr. Francesco Cappelli, Dr. Natalia Bruno, Mr. Nicola Corrias, Dr. Simone Borri, Dr. Paolo De Natale, Dr. Alessandro Zavatta

Effect of source statistics on utilizing photon entanglement in quantum key distribution

» Mr. Radim Hošák, Dr. Ivo Straka, Prof. Ana Predojevic, Prof. Radim Filip, Dr. Miroslav Ježek

Experimental demonstration of a quantum-inspired Fredkin gate based on spatial modes of light

» Mr. Daniel Urrego, Dr. Dorilian Lopez-Mago, Dr. Verónica Vicuña-Hernández, Dr. Juan P. Torres

Using deep learning for digitally controlled STIRAP

» Mr. Lorenzo Moro, Ms. Iris Paparelle, Dr. Enrico Prati

Experimental adaptive quantum state tomography based on rank-preserving transformations

» Mr. Gleb Struchalin, Mr. Alexei Moiseevskiy, Mr. Stanislav Straupe, Prof. Sergei Kulik

4:05pm

Flash Session 2B

Kiutra Room

Chaired by: Prof. André Stefanov

Optomechanical cooling efficiency: the cost of turning a valve

» Dr. Juliette Monsel, Dr. Nastaran Dashti, Mr. Sushanth Kini Manjeshwar, Dr. Janine Splettstoesser, Prof. Witlef Wieczorek

Towards superradiant frequency references

» Ms. Francesca Fama', Mr. Sheng Zhou, Ms. Camila Beli Silva, Mr. Mikkel Tang, Ms. Zeyuan Zhang, Dr. Stefan Alaric Schäffer, Mr. Rodrigo González Escudero, Dr. Chun-Chia Chen, Dr. Benjamin Pasquiou, Dr. Shayne Bennetts, Prof. Florian Schreck, Mx. iqClock consortium



Continued from **Wednesday, 4 November**

Compton Scattering as a Geodesic Path at the Bloch's Sphere

» [Dr. Huber Nieto-Chaupis](#)

Ultra high fidelity preparation and measurement of polarization using twisted nematic liquid crystals.

» [Mr. Martin Bielak](#), Mr. Robert Stárek, Mr. Vojtěch Krčmarský, Dr. Michal Mičuda, Dr. Miroslav Ježek

Design and Construction of the first Portable Quantum Gravimeter in Mexico

» Mr. DIEGO ALEGRIA MEZA, Mr. JOSUE GUSTAVO CARMONA MORENO, Dr. NEIL VLADIMIR CORZO TREJO, Dr. EDUARDO DE CARLOS LOPEZ, Dr. JESUS FLORES-MIJANGOS, Dr. JOHN ALEXANDER FRANCO, Dr. EDUARDO GOMEZ, Dr. SAEED HAMZELOUI, Dr. LINA HOYOS-CAMPO, Dr. KARINA JIMENEZ GARCIA, Dr. JOSE JIMENEZ-MIER, Mr. JOSE LUIS LOPEZ GONZALEZ, Mr. DAI LOPEZ JACINTO, [Mr. CRISTIAN DE JESÚS LÓPEZ MONJARAZ](#), Dr. JOSE MAURICIO LOPEZ ROMERO, Ms. ALEJANDRA LOPEZ VAZQUEZ, [Mr. ANDRÉS MEDINA HERRERA](#), Dr. RICARDO MENDES-FRAGOSO, Dr. GEORGINA ANGELICA OLIVARES RENTERIA, [Mr. Hellmunt Peña](#), Mr. JOAQUIN GERARDO RABOÑO BORBOLLA, Dr. FERNANDO RAMIREZ, Dr. VICTOR MANUEL VALENZUELA JIMENEZ

Pseudo Feynman Amplitudes in Classical Electrodynamics

» [Dr. Huber Nieto-Chaupis](#)

4:05pm

Flash Session 3B

ID Quantique Room

Chaired by: Dr. Bruno Julia-Diaz

THz electric field calibration with two-photon spectroscopy of cold trapped HD+

» [Dr. Florin Lucian Constantin](#)

Non-linear optical properties of a molecular ion confined in GaAs-GaAlAs semiconductor ring nanostructure under intense laser field.

» [Dr. Yoder Suaza](#), Dr. Marlon Fulla, Dr. Jairo Marín, Dr. Jaime Andrés Pérez Taborda, Prof. Alba Graciela Ávila Bernal

Nonlinear optical properties modelling of quantum rings having rectangle-shaped holes.

» [Mr. Mario David Ayala Quitiaquez](#), Dr. Yoder Suaza, Mr. Luis Gabriel Lafaurie Ponce, Dr. Jairo Marín

Theoretical description of the optical properties of nematic nanocomposites with gold and silver nanoparticles

» Prof. Mikhail Osipov, [Mr. Alexey Merekalov](#), Dr. Alexander Ezhov

Numerical modeling of nonlinear optical properties in semiconductor diamond-shaped quantum ring with elliptical hole

» [Mr. Santiago Ríos Álvarez](#), Mr. Juan Naranjo-Rendón, Dr. Jairo Marín

The Implementation of the photonic-crystal-resonator in the ultra-strong coupling regime

» [Dr. Amine CHENTOUF](#), Prof. Zoubida SAKHI, Prof. Mohamed BENNAI

4:35pm

Break & Networking

Networking & Break Area

4:45pm

Plenary Session

Bluefors Room

Chaired by: Prof. Hugues de Riedmatten

4:45pm

Trustworthy certifications of quantum communication technologies

» [Prof. Nicolas Sangouard](#)

5:30pm

Quantum Nano-Photonic Devices Based on Rare-Earth Ions

» [Prof. Andrei Faraon](#)



Continued from **Wednesday, 4 November**

6:15pm

Closing Ceremony
Bluefors Room