

Program

Monday, June 27th

08:00 **Registration open**

09:00 – 09:30 **Opening, Presentation of the Vendors**

ID QUANTIQUE SA, Carouge/Geneva, Switzerland,

MICRO PHOTON DEVICES S.r.l., Bozen, Italy,

PicoQuant GmbH, Berlin, Germany,

qutools GmbH, Munich, Germany,

09:30 – 10:30 **Applications**

09:30 – 10:00 Figer (invited)
 Single Photon Imaging Array Detectors for Astrophysics and Biophotonics

10:00 – 10:15 Krainak
 Photon number detectors for NASA applications

10:15 – 10:30 Krichel
 Time-of-Flight Depth Profiling Applications Based on Single-Photon Detection

10:30 – 11:00 **Coffee break**

11:00 – 12:30 **Optical Communication and Quantum Information Processing**

11:00 – 11:30 Farr (invited)
 Single Photon Detectors for Capacity Achieving Optical Communication

11:30 – 11:45 Gerrits
 Characterization of high-purity, pulsed squeezed light at telecom wavelengths from pp-KTP for quantum information applications

11:45 – 12:00 Guha
 Superadditive Optical Communications: New Applications of Integrated Coherent Photonics and Single Photon Detectors

12:00 – 12:15 Walther
 Challenges in Photonic Quantum Information Processing

12:15 – 12:30 Ma
 Single photon frequency up-conversion and its applications in quantum information systems

12:30 – 13:30 **Lunch break**

13:30 – 15:00 **Superconducting Detectors I**

13:30 – 14:00 Nam (invited)
 Optical and near-infrared photon detection with superconducting devices

14:00 – 14:15 Gerrits
 Extending Single-Photon Optimized Superconducting Transition Edge Sensors Beyond the Single-Photon Counting Regime

14:15 – 14:30 Bagliani
 Hundred parallel connected TES array for single photon detection

14:30 – 14:45 Akhlaghi
 Quantum Tomography and Modelling of a Superconducting Nanowire Single Photon Detector

14:45 – 15:00 Tanner
 Spatially Dependent Timing in a Superconducting Single Photon Detector

15:00 – 15:30 **Coffee break**

15:30 – 17:00 **Single Photon Avalanche Detectors I**

15:30 – 16:00 Smith (invited)
 Quantum-enhanced metrology in the real world: Losses, decoherence, and noise make life on the quantum edge challenging

16:00 – 16:15 Itzler
 What Does SPAD Afterpulsing Actually Tell Us About Defects in InP?

16:15 – 16:30 Bahgat Shehata
InGaAs/InP single-photon detection module with clean temporal response

16:30 – 16:45 Patel
Gigacounts-per-Second Single Photon Detection Based on a Single-Pixel Avalanche Photodiode

16:45 – 17:00 Acerbi
Dark counts, afterpulsing and timing jitter of latest InGaAs/InP Single-Photon Avalanche Diodes

Tuesday, June 28th

08:00 Registration open

09:00 – 10:30 Quantum Information Processing, Quantum Key Distribution, Theory

09:00 – 09:30 Kwiat (invited)
Optimized (Non)Entanglement: Designer Sources for Next-Generation Quantum Information

09:30 – 09:45 Almeida
Exponentially faster measurements of quantum dynamics via compressive sensing

09:45 – 10:00 Collins
An Analysis of Single-Photon Detectors in a GigaHertz Clock Rate Robust Quantum Key Distribution System

10:00 – 10:15 Lenhart
Latest Results on the Standardization of Quantum Key Distribution

10:15 – 10:30 Meyer-Scott
Demonstration of Quantum Key Distribution System Suitable for High Loss Satellite Uplink

10:30 – 11:00 Coffee break

11:00 – 12:30 Superconducting Detectors II

11:00 – 11:15 Leoni
Waveguide superconducting single photon detectors

11:15 – 11:30 Baek
Single-Photon Detectors Based on a Superconducting a-WxSi1-x Nanowire

11:30 – 11:45 Correa
Single infrared-emitting nanocrystal fluorescence dynamics using superconducting nanowire detectors

11:45 – 12:00 Grein
A Photon-Counting Optical Receiver Based on Superconducting Nanowire Detector Arrays for the Lunar Laser Communications Demonstration

12:00 – 12:15 Natarajan
High Efficiency Superconducting Nanowire Single-Photon Detectors For Optical Quantum Information Science Applications

12:15 – 12:30 Zwiller
Detecting single photons with superconducting nanowires

12:30 – 13:30 Lunch break

13:30 – 15:00 FPGA and Multichannel

13:30 – 13:45 Crotti
High performance Time-to-Amplitude Converter array

13:45 – 14:00 Pooser
FPGA-based gating and logic for multichannel single photon counting

14:00 – 14:15 Cuccato
Ultra-Compact Single-Channel Acquisition System For TCSPC Measurements

14:15 – 14:30 Chen
Experimental Demonstration of the Conditional Nulling Receiver

14:30 – 14:45 Williams
64-Channel Binary Pulse Processing Instrument

14:45 – 15:00 Dell'Anna
Prototype of THz photon spectroscopic camera based on mesoscopic devices

15:00 – 15:30 Coffee break

15:30 – 17:00 Single Photon Avalanche Detectors II

15:30 – 16:00 Gulinatti (invited)
New Silicon SPAD technology for enhanced red-sensitivity, high-resolution timing and system integration

16:00 – 16:15 Rochas

Asynchronous & 100MHz-gated photon detection at telecom wavelengths

16:15 – 16:30 Restelli
Time-domain measurements of afterpulsing in a periodically-gated InGaAs SPAD
16:30 – 16:45 Bülter
A new red sensitive single photon counting module for timing applications
16:45 – 17:00 Williams
Single Photon Counting Linear-Mode Avalanche Photodiodes

18:00 – 20:00 Poster session (poster size: 1.18 m x 1.45 m)

Lunghi
Free Running Single Photon Detection based on a negative feedback InGaAs APD
Heath
Nano-optical studies of single and parallel nanowire superconducting single photon detectors
Blazej
Picosecond stability photon counting detector package for space missions
Hepp
Color Centers in Diamond for Bright, Narrow-Band Single Photon Emission
Villegier
SWIFTS-SNSPD micro-spectrometer integration with a SiN waveguide
Slattery
Towards narrow linewidth non-degenerate correlated photon pairs
Racu
Impurity centres in GaN and AlN for novel single photon sources
Lamas-Linares
Multimode fiber coupling to transition edge sensors in the visible range
Gu
Photon-number-resolving detection based on synchronized frequency upconversion at 1.04 μm
Senekane
Review of Single Photon Detectors and Their Applicability to Quantum Key Distribution
Witek
Engineering quantum dots for single photon to single spin interfaces
Wu
1550nm laser ranging with a quasi-continuous mode InGaAs APD single-photon detector
Lemmens
Control of Spontaneous Emission and Dynamics of Quantum Dots, Organic Dyes and Molecular Magnets in Confinement
Zhang
Multi-Channel 30 MHz Gating InGaAs/InP Single-Photon Avalanche Diodes for Practical Decoy-State Quantum Key Distribution
Polyakov
Field Programmable Gate Array Technology – enabling real-time data handling in photon-counting applications
Heindel
Quantum key distribution using electrically triggered quantum dot - micropillar single photon sources

Wednesday, June 29th

08:00 Registration open

09:00 – 10:30 Entanglement and Photon Manipulation

09:00 – 09:30 Zbinden (invited)
What are Single Photons good for?
09:30 – 09:45 Chen
Entangled Photons from a Si-on-Insulator Microring
09:45 – 10:00 Grice
Photon Pair Source Optimized for Multi-Photon Entanglement
10:00 – 10:15 Beveratos
Purcell effect for high fidelity entangled photon pairs
10:15 – 10:30 Evans
Polarization Manipulating Quantum Lightwave Circuits

10:30 – 11:00 Coffee break

11:00 – 12:15 Sources I
11:00 – 11:30 Wrachtrup (invited)
Interfacing diamond defects
11:30 – 11:45 Stevens
Third-Order Antibunching of a Single-Photon Source
11:45 – 12:00 Steudle
Fiber-Integrated Single-Photon Generation and Detection
12:00 – 12:15 Wahl
High Speed Quantum Random Number Generator with Provably Bounded Bias

12:30 – 13:30 Lunch break

13:30 – 15:00 Detection efficiency
13:30 – 14:00 Andrew Shields / Oliver Thomas (invited)
Resolving the Photon Number with fast-gated Silicon Avalanche Photodiode
14:00 – 14:15 Guerreiro
Quantum Cloning Radiometer: towards higher accuracy
14:15 – 14:30 Müller
Towards Traceable Calibration of Single Photon Detectors Using Synchrotron Radiation
14:30 – 14:45 Taralli
Quantum characterization of photon number resolving Transition-Edge Sensor
14:45 – 15:00 Brida
Multimode Spatial Correlation in PDC: Sub-Shot-Noise Quantum Imaging and CCD Calibration

15:00 – 15:30 Coffee break

15:30 – 17:15 Special session: Towards realizing photon-based standards
15:30 – 16:00 Migdall (invited)
Single-Photon Tools, Techniques, and Prospects for Metrology
16:00 – 16:30 Rastello (invited)
Metrology Towards Quantum-Based Photon Standards
16:30 – 16:45 Porrovecchio
A transfer standard for the low power / few photon regime – the trap detector plus switched integrator amplifier
16:45 – 17:00 Schmunk
Relative detection efficiency calibration of single photon avalanche photo detectors using non-classical light
17:00 – 17:15 Degiovanni
Experimental realization of a shuttered heralded single-photon source

19:00 – 22:00 Conference Dinner - Barbecue

Thursday, June 30th

08:00 Registration open

09:00 – 10:30 Sources II
09:00 – 09:30 Goetzinger (invited)
Planar dielectric antennas for collecting photons from a single emitter with near unity efficiency
09:30 – 09:45 Goldschmidt
Toward single photon generation and storage in a rare-earth ion-doped crystal
09:45 – 10:00 Lukishova
Room-Temperature Single-Photon Sources with Definite Circular and Linear Polarizations
10:00 – 10:30 Bleuse (invited)
Quantum Dots in Tapered Photonic Wires: towards Unit-Efficiency Single-Photon Sources

10:30 – 11:00 Coffee break

11:00 – 12:15 Sources III
11:00 – 11:30 Rarity (invited)
Progress in single photon sources, heralded versus true single photons
11:30 – 11:45 Michler
High-frequency electrically driven quantum dot single-photon source

11:45 – 12:00 Reimer
Single photon emitter in a tapered nanowire waveguide
12:00 – 12:15 Zwiller
Slow single photons: merging quantum dots and atomic vapors

12:15 – 12:30 Closing session
12:30 – 13:30 Lunch

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