Thursday 28 September

8:45 - 9:00  Registration *(Pavillon du Mail)*
9:00 - 9:05  Opening address & Organization of the workshop

**Session 1  “Single photon measurements, radiometry with entangled sources, superconducting particle detectors”**
*Chair: Dr Maria Luisa Rastello, INRIM (Italy)*

9:05 - 9:40  *Quantum optical metrology by photons*
Dr Maria Luisa Rastello, INRIM (Italy)

9:40 - 10:10  *A single-emitter sub-shot noise quantum light source: press a button and get one photon*
Prof. Dr Stephan Götzinger, Max Planck Institute for the Science of Light (Germany)

10:10 - 10:40  *Quantum imaging: challenges and perspectives in radiometry and biophotonics*
Dr Ivano Ruo Berchera, INRIM (Italy)

10:40 - 11:20  Tea / Coffee break *(Tent in the garden)*

11:20 - 11:50  *Predictable single photon source with variable photon flux*
Prof. Erkki Ikonen, VTT MIKES & Aalto University (Finland)

**Session 2  “Quantum standards for mass, pressure vacuum, temperature, acoustics and vibration”**
*Chair: Dr Carl Williams, NIST/JQI*

11:50 - 12:25  *The next generation of metrology – NIST Quantum SI*
Dr Gregory F. Strouse, NIST (United States)

12:25 - 12:55  *Coherent caloritronics in superconducting circuits: from heat interferometers to 0-π controllable thermal Josephson junctions.***
Dr Federico Paolucci, NEST (Italy)

12:55 - 13:55  Lunch *(Tent in the garden)*

13:55 - 14:25  *Putting the quantum into mechanics: Quantum standards for mass and force*
Dr Stephan Schlamminger, NIST (United States)

14:25 - 14:55  *Quantum absolute sensors for gravity measurements*
Dr Sébastien Merlet, LNE-SYRTE (France)

**Session 3  “Highly entangled systems for metrology, entangled optical clocks”**
*Chair: Prof. Patrick Gill, NPL*

14:55 - 15:30  *Atomic clocks, superpositions and entanglement*
Prof. Patrick Gill, NPL (United Kingdom)

15:30 - 16:10  Tea / Coffee break *(Tent in the garden)*

16:10 - 16:40  *Optical clocks with single ions*
Dr Ekkehard Peik, PTB (Germany)

16:40 - 17:10  *Optical clock protocols for Heisenberg-limited stability*
Dr David R. Leibrandt, NIST (United States)

17:10 - 17:40  *Non-destructive detection for strontium optical lattice clocks: towards a lattice clock in the quantum regime*
Dr Jérôme Lodewyck, LNE-SYRTE (France)

17:40 - 19:00  Posters of sessions 1, 2 and 3 *(Pavillon de Breteuil) / Reception *(Tent in the garden)*
Friday 29 September

**Session 4  “Advances in quantum electrical standards, single electron transistors and demonstrations of the "quantum metrology triangle"
Chair: Dr Uwe Siegner, PTB (Germany)**

8:30 - 9:05  Electrical quantum standards: foundation of electrical units and measurements
Dr Uwe Siegner, PTB (Germany)

9:05 - 9:35  Practical quantum current standard: performances and perspectives
Dr Wilfrid Poirier, LNE (France)

9:35 - 10:05  GaAs based single electron pumps for electrical quantum metrology
Dr Hans Werner Schumacher, PTB (Germany)

10:05 - 10:45  Tea / Coffee break (Tent in the garden)

10:45 - 11:15  Stable and tunable carrier density control of epitaxial graphene for quantum metrology
Dr Hans He, Chalmers University of Technology (Sweden)

11:15 - 12:45  Posters of sessions 4 and 5 (Pavillon de Breteuil)

12:45 - 13:45  Lunch (Tent in the garden)

**Session 5  “Beyond quantum metrology"
Chair: Dr Sang-Kyung Choi, KRISS (Republic of Korea)**

13:45 - 14:20  From quantum interference to human perception
Prof. Kiwoong Kim, KRISS (Republic of Korea)

14:20 - 14:50  New approaches for sensitivity and spectral resolution improvement in diamond quantum metrology
Prof. Dr Fedor Jelezko, Ulm University (Germany)

14:50 - 15:20  Nanomechanical oscillators in the single-phonon regime
Dr Junho Suh, KRISS (Republic of Korea)

15:20 - 15:50  Quantum optical explorations of the nanoscale metrology frontier
Prof. Jacob Taylor, NIST/JQI (United States)

15:50 - 16:20  NanoSQUIDs for quantum metrology
Prof. Ling Hao, NPL (United Kingdom)

16:20  Closure of the Workshop