QTX-8 Workshop on Quantum Technologies on Small Satellites

-- Tentative Workshop Program --

Day 1 (Monday, August 5th)

08:30 – 09:00  Registration and Welcome

Session 1: Missions and payloads

09:00 – 09:30  Tobias Vogl (TUM): QUICK
09:30 – 10:00  Liam Ramsey (UIUC): SEAQUE (Space Entanglement and Annealing QUantum Experiment)
10:00 – 10:30  Sheng-Kai Liao (USTC): Jinan-1 Quantum satellite and the real-time satellite to ground quantum key distribution experiment
10:30 – 11:00  Coffee break

Session 2: Missions and payloads II

11:00 – 11:30  Thomas Bäumer (SES): EAGLE-1
11:30 – 12:00  Lukas Knips (LMU): QUBE and QUBE2
12:00 – 12:30  Erik Beckert (IOF): CubEniK
12:30 – 13:30  Lunch break

Session 3: Optical ground stations

13:30 – 14:00  Kimia Mohammadi (UWaterloo): Overview of the Waterloo ground station for QEYSSat build
14:00 – 14:30  James Grieve (TII): Recent activity at the Abu Dhabi Quantum Optical Groundstation (ADQOGS)
14:30 – 15:00  Hannah Thiel (UVigo): An optical ground station on the western coast of Europe
15:00 – 15:30  Ayesha Reezwana (NUS): An optical ground station for quantum communication in Singapore
15:30 – 16:00  Coffee break

Session 4: Posters

16:00 – 18:00  Kumar Nilesh (TUM): Information theoretic analysis of authentication based on quantum PUFs
               Henri Morin (UWaterloo): Performance estimates for QKD with single photon emitters for ground to QEYSSat transmission
               Gianluca Santis (TII): ADQOGS: a versatile optical ground station for quantum communications in Abu Dhabi
               Mostafa Abasifard (TUM): QKD in daylight conditions
Armin Hochrainer (qtlabs): qtlabs and space QKD
Chanaprom Cholsuk (TUM): Hexagonal boron nitride defects as quantum emitters and quantum memories
Anand Kumar (TUM): Solid-state quantum emitter for space applications
Sujin Suwanna (UMahidol): Hybrid Strategy Optimization of Fidelity in Network of Quantum Repeaters
Tanvirur Islam (NUS): Small satellite-based quantum communication and quantum key distribution: challenges and outlook

18:00 – 20:30 Workshop dinner

Day 2 (Tuesday, August 6th)

Session 5: Light sources, detectors, and devices
09:00 – 09:30 Fabian Steinlechner (IOF): High-dimensional Quantum Communication in Space
09:30 – 10:00 Michael Hofbauer (TUVienna): Integrated Multi-channel SPAD Receivers
10:00 – 10:30 Markus Krutzik (HUB): Atomic devices for timing, sensing, and networking applications
10:30 – 11:00 Daniel Oi (UStrathclyde): Satellite entanglement distribution by long-duration quantum memory transport
11:00 – 11:30 Coffee break

Session 6: Industry
11:30 – 12:00 Martin Bohmann (qtlabs): qtlabs and its optical ground stations – an overview
12:00 – 12:30 Danny Kim (HRL): Demonstration of Entanglement Swapping with low SWaP components
12:30 – 13:00 Philip Menz (qssys): Development of a P&M QKD source for space with TRL 6
13:00 – 14:00 Lunch break

Session 7: Quantum communication and quantum networks
14:00 – 14:30 Magdalena Stobinska (UWarsaw): Long distance device-independent QKD with enhanced key rates
14:30 – 15:00 Paolo Villoresi (UPadova): Progressing on Space QComms
15:00 – 15:30 Andreas Reiserer (TUM): Erbium dopants for long-distance quantum networking
15:30 – 16:00  
**Coffee break**

### Session 8: Enabling technologies

16:00 – 16:30  Till Dolejsky (DLR): Laser terminals for Cubesat based satellite QKD
16:30 – 17:00  Mate Galambos (BME): Hungarian Quantum Satellite Enabling Technologies
17:00 – 17:30  Klaus Shilling (ZfT): Challenges for Spacecraft Design and LEOP in the Quantum Key Distribution Missions QUBE-I and QUBE-II
17:30 – 17:35  Concluding remarks

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**Day 3 (Wednesday, August 7th)**

Visit to the DLR site Oberpfaffenhofen with their optical ground station

09:30 – 09:45  Gathering
09:45 – 10:30  Welcome and introductory talk
10:30 – 10:45  **Coffee break and grouping**
10:45 – 11:30  Lab Show 1
11:30 – 12:15  Lab Show 2
12:15 – 12:30  Wrap-up
12:30 – 13:00  **Snacks**