

QTX-8 Workshop on Quantum Technologies on Small Satellites

-- 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): QUICK³

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

Tjorben Matthes (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 Johannes Handsteiner (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

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*