Program

Monday, January 11, 2021

08:45 – 09:00	Stefan Filipp	**Kick-off scientific program**

Ion Traps (Chair: Stefan Filipp)

09:00 – 09:45	Rainer Blatt	**Quantum Computation and Quantum Simulation with Strings of Trapped Ca+ Ions**
09:45 – 10:30	Christopher Ballance	**Networking Trapped-Ion Quantum Computers**
10:30 – 10:45	Stefan Jorda	**About the Wilhelm and Else Heraeus Foundation**
10:45 – 11:00	*COFFEE BREAK*	

Spin Qubits in Quantum Dots (Chair: Andreas Fuhrer)

11:00 – 11:45	Hendrik Bluhm	**Asymmetric sensing dots – a scaling oriented approach to boost quantum dot qubit readout**
11:45 – 12:30	Andreas Kuhlmann	**Scalable silicon quantum computing**
12:30	*LUNCH*	

Quantum Theory and Applications (Chair: Frank Wilhelm-Mauch)

14:00 – 14:45	Christiane Koch	**Quantum optimal control for fast and accurate state preparation**
14:45 – 15:30	Stefan Woerner	**Towards Quantum Advantage in Finance**
15:30 – 15:45	*COFFEE BREAK*	

Program

Monday, January 11, 2021

Poster Session I

15:45 – 16:30	**Flash Talks**	
16:30 – 17:00	**Poster Session**	

Quantum Theory and Application (Chair : Frank Wilhelm-Mauch)

17:00 – 17:45	Harry Buhrmann	**Musings on the Future of Quantum Software**

Evening Lecture (Chair: Stefan Filipp)

17:45 – 18:30	Charlie Marcus	**Topological superconductivity in epitaxial superconductor-semiconductor-ferromagnetic materials**

Program

Tuesday, January 12, 2021

Ion Traps (Chair: Christopher Ballance)

08:30 – 09:15	Jonathan Home	**Quantum error correction of a logical qubit using autonomous dissipation**
09:15 – 10:00	Christof Wunderlich	**Trapped Ions and MAGIC for Quantum Computing**
10:00 – 10:15	*COFFEE BREAK*	

Superconducting Qubits (Chair: Per Delsing)

10:15 – 11:00	Andreas Wallraff	**Progress Towards Quantum Error Correction in a Distance-Three Surface Code with Superconducting Circuits**
11:00 – 11:45	John Martinis	**Quantum supremacy using a programmable superconducting processor**
11:45 – 12:30	Kuan Tan	**Towards scalable superconducting quantum computers: IQM's perspective**
12:30	*LUNCH*	

Control of Qubits (Chair: Hendrik Bluhm)

14:00 – 14:45	Hannes Töpfer	**Energy-efficient microelectronics using flux-quantum based information processing – current state-of-the-art and potential in Europe**
14:45 – 15:30	Edoardo Charbon	**Cryo-CMOS Electronics for Quantum Computing**
15:30 – 15:45	*COFFEE BREAK*	

Program

Tuesday, January 12, 2021

Poster Session II

15:45 – 16:30	**Flash talks**	
16:30 – 17:00	**Poster session**	

Superconducting Qubits (Chair: Mikko Möttönen)

17:00 – 17:45	Jonas Bylander	**Ubiquitous TLS fluctuations, and a depth-2 implementation of QAOA**
17:45 – 18:30	William Oliver	**Quantum Engineering of Superconducting Qubits**

Program

Wednesday, January 13, 2021

Quantum Theory (Chair: Stefan Wörner)

09:15 – 10:00	Chiara Macchiavello	**Hypergraph states in quantum computing**
10:00 – 10:45	Barbara Terhal	**Stoquastic Hamiltonians in Circuit-QED**
10:45 – 11:00	*COFFEE BREAK*	

Poster Session III

11:00 – 11:45	**Flash talks**	
11:45 – 12:30	**Poster session**	
12:30	*LUNCH*	

Spin Qubits (Chair: Maude Vinet / Andreas Fuhrer)

14:00 – 14:45	Romain Maurand	**Scaling spin-based silicon quantum computing using CMOS technology: electron and hole quantum dots**
14:45 – 15:30	Lieven Vandersypen	**Scaling up semiconductor spin qubits**
15:30 – 16:15	Jason Petta	**Towards high fidelity quantum gates in silicon quantum dot arrays**
16:15 – 16:30	Scientific organizers	**Closing remarks and poster awards**

End of seminar