

Conference on Materials for Quantum Computing University of Pittsburgh, October 30 - November 2 2018

Tuesday, October 30 2018 – University Club Ballroom B (second floor)

8:00 am Breakfast (served outside the Ballroom)

9:00 am Welcome Remarks by Organizers

Morning Session Chair: Roger Mong, University of Pittsburgh

9:05

Jay Sau, University of Maryland

Transport and Josephson response signatures of Andreev versus Majorana states

9:45

Vlad Pribiag, University of Minnesota

1D and 2D Platforms for Topological Quantum Devices

10:25 Coffee Break

10:55

David Cobden, University of Washington

Topological, superconducting, ferroelectric and magnetic phenomena in thin WTe₂

11:35

Felix von Oppen, FU Berlin

Quantum Computation with Majorana fermion codes

12:15 Lunch Break

Afternoon Session Chair: Stevan Nadj-Perge, Caltech

2:00

Roman Lutchyn, Microsoft Station Q

Topological superconductivity in full-shell proximitized nanowires

2:40

Sebastien Plissard, LAAS CNRS Toulouse

Defect-free and composition controlled BiSb nanostructures for quantum computing

3:20 Coffee Break

4:00 Poster Session

Wednesday, October 31 2018 – University Club Ballroom B (second floor)

8:00 am Breakfast (served outside the Ballroom)

Morning Session Chair: Victor Vakaryuk, Physical Review

9:00

Chris Palmstrøm, UCSB

Development of Superconductor/Semiconductor Heterostructures for Topological Quantum Computation

9:40

Barbara Jones, IBM

The Keldysh-ETH quantum computation algorithm

10:20 Coffee Break

10:50

Luis Jauregui, Harvard University

Interlayer Excitons and Magneto-Exciton Condensation in van der Waals Heterostructures

11:30

Andrei Bernevig, Princeton

Topology of Twisted Graphene from Topological Quantum Chemistry

12:10 Lunch Break

Afternoon Session Chair: Benjamin Hunt, Carnegie Mellon University

2:00

Andrea Young, UCSB

Correlations in Moire superlattice flat bands: topological order, symmetry breaking, and superconductivity

2:40

Xavier Waintal, CEA Grenoble

The Achilles' heel of surface codes -- And -- Why flying qubits might save the day

3:20 Coffee Break

3:50

Matthew Gilbert, Stanford University

The Non-Hermitian Chern Insulator

5:30pm-9:30pm Phipps Conservatory visit and dinner (by invitation)

Thursday, November 1 2018 – University Club Ballroom B (second floor)

8:00 am Breakfast (served outside the Ballroom)

Morning Session Chair: Michael Hatridge, University of Pittsburgh

9:00

Manuel Houzet, CEA Grenoble

Microwave spectroscopy of a weakly-pinned charge density wave in a Josephson junction chain

9:40

Erik Bakkers, TU Eindhoven

Bottom-up grown nanowire quantum devices

10:20 Coffee Break

10:50

Michel Devoret, Yale University

Addressing spectroscopically single Andreev levels in super-semi nanowires

11:30

Peter Krogstrup, Microsoft Quantum and Niels Bohr Institute

Hybrid epitaxy of magnetic-semiconductor-superconductor materials for topological quantum applications

12:10 Lunch Break

Afternoon Session Chair: Noa Marom, Carnegie Mellon University

2:00

Cristian Urbina, CEA Saclay

Spin-Orbit splitting of Andreev states revealed by microwave spectroscopy

2:40

Alex Levchenko, University of Wisconsin

Josephson currents in chaotic quantum dots and multiterminal junctions

3:20 Coffee Break

3:50

Tudor Stanescu, West Virginia University

Electrostatic effects in semiconductor-superconductor hybrid structures

4:30pm – Lab tours (Pittsburgh Quantum Institute and Petersen Institute of Nanoscience and Engineering)

Friday, November 2 2018 – University Club Gold Room (room change! second floor)

8:00 am Breakfast (served outside the Ballroom)

Morning Session Chair: Sergey Frolov, University of Pittsburgh

9:00

Benjamin Hunt, Carnegie Mellon University

Tuning Ising Superconductivity with Layer and Spin-Orbit Coupling in 2D Transition-Metal Dichalcogenide Superconductors

9:40

Javad Shabani, New York University

Josephson junctions in two-dimensional epitaxial Al-InAs structures

10:20 Coffee Break

10:50

Leonid Glazman, Yale University

Demkov-Osherov tunneling of Majorana fermions

11:30

Julia Meyer, Universite Grenoble-Alpes

Spontaneous spin polarization of non-equilibrium quasiparticles in mesoscopic superconductors

12:10 Conference ends