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
Magneto-transport in ballistic InSb nanowires with ferromagnetic contacts

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
Fractional Josephson Effect in Number-Conserving Systems

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
Title of the Talk

9:40 Barbara Jones, IBM
The Keldysh-ETH quantum computation algorithm

10:20 Coffee Break

10:50 Philip Kim, 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, CEA Saclay
Spontaneous spin polarization of non-equilibrium quasiparticles in mesoscopic superconductors

12:10 Conference ends