

2020 AFOSR Quantum Information Science and Atomic/Molecular Physics Program Reviews

Dr. Grace Metcalfe | July 7-8, 2020 | Arlington, VA

Agenda Day 1 | July 7, 2020

Atomic and Molecular Physics

Time	Topic	Speaker
10:40-11:00	Login	
11:00-11:15	Welcome and Introductory comments	
11:15-11:45	Engineering many-body quantum states and dissipative dynamics in quantum simulators	Andrew Daley University of Strathclyde
11:45-12:15	New approaches to quantum control with individual molecule sensitivity	Kang-Kuen Ni (MURI) Harvard
12:15-12:45	Optical Control of Interactions in Non-equilibrium Fermi Gases	John Thomas North Carolina State University
12:45-13:00	BREAK	
13:00-13:30	Modeling the Dynamics of Exotic Many-body States of Ultracold Atoms	Vito Scarola Virginia Tech
13:30-13:45	Ultracold Polyatomic Molecules for Many-Body Quantum Simulation	Nathaniel Vilas (NDSEG) Harvard University
13:45-14:15	Quantum Gas Microscopy of Strongly Correlated Fermions	Martin Zwierlein MIT
14:15-14:45	Dynamics and Thermodynamics of Many-Particle cold Atom Systems	Anatoli Polkovnikov Boston University
14:45-15:00	BREAK	
15:00-15:30	Squeezed light from 4-wave mixing: toward sensitive imaging and measurement applications	Paul Lett University of Maryland
15:30-16:00	Studying emergent phenomena driven by interactions in a momentum-space lattice	Bryce Gadway (YIP) University of Illinois
16:00-16:30	Ultracold Atomic Kondo Impurities	Colin Parker (YIP) Georgia Tech
16:30-17:00	Discussion	
1700	MEETING ADJOURN	

2020 AFOSR Quantum Information Science and Atomic/Molecular Physics Program Reviews

Dr. Grace Metcalfe | July 7-8, 2020 | Arlington, VA

Agenda Day 2 | July 8, 2020

Quantum Information Science

Time	Topic	Speaker
10:25-10:45	Login	
10:45-11:15	Photonic Quantum Matter	Mohammad Hafezi (MURI) University of Maryland
11:15-11:45	Dissipatively Stabilized Qubits and Materials	Jon Simon (MURI) University of Chicago
11:45-12:00	Integrated silicon photonic architectures for optical quantum computing	Uttara Chakraborty (NDSEG) MIT
12:00-12:30	Design and optimization of synthesizable materials with targeted quantum characteristics	Giulia Galli (team) University of Chicago / MIT
12:30-12:45	BREAK	
12:45-13:15	Creation and control of large-scale entangled quantum matter	Ana Maria Rey (team) University of Colorado
13:15-1330	Towards Optical Quantum Communication in Space	Joseph Chapman (NDSEG) University of Illinois
13:30-14:00	Investigation of cryogenic ion traps for quantum networking memory nodes and hybrid quantum information processing systems	Kathy-Anne Soderberg AFRL
14:00-14:30	A Coherent atom-optomechanic interface for precision sensing and quantum information	Mahdi Hosseini Purdue University
14:30-14:45	BREAK	
14:45-15:15	Controlling propagation and entanglement of multi-photon quantum states by driven dissipation	Chen Wang (YIP) Massachusetts University, Amherst
15:15-15:30	Enabling and Accelerating the Realization of Scalable Quantum Computing	Pranav Gokhale (NDSEG) University of Chicago
15:30-16:00	Scalable quantum networks and devices using erbium ions integrated with silicon nanophotonics	Jeff Thompson (YIP) Princeton University
16:00-16:30	Non-local Quantum Interactions Using Trapped Ions and Integrated Photonics	Edo Waks University of Maryland
1700	MEETING ADJOURN	