

MICHIGAN QUANTUM SUMMER SCHOOL PROGRAM

MCTP

JUNE 16-27, 2008

340 WEST HALL

MONDAY, JUNE 16TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM Welcoming Introduction – History of the Michigan Summer Schools
Professor Jens Zorn (University of Michigan)

9:45 AM Barbara Terhal (IBM Research)
“Fault Tolerant Quantum Computation”

10:45 AM Aephraim Steinberg (University of Toronto)
“Optical Quantum Information Processing”

11:45 AM LUNCH BREAK

1:00 PM Lu Sham (UCSD)
“Quantum Dot Qubits --- Theory”

2:00 PM Duncan Steel (University of Michigan)
“Quantum Dot Qubits --- Experiments”

3:00 PM Coffee Break (337 West hall)

3:30 PM Jun Ye (University of Colorado)
“Art of Light-Based Precision Measurement”

4:30 PM Poster Presentations and Discussions (in hall outside of lecture hall)

5:30 PM Poster Session Concludes

TUESDAY, JUNE 17TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM Wojciech Zurek (Los Alamos National Lab)
“Decoherence and Beyond”

10:30 AM Barbara Terhal (IBM Research)
“Fault Tolerant Quantum Computation”

11:30 AM LUNCH BREAK

- 1:00 PM Lu Sham (UCSD)
"Quantum Dot Qubits --- Theory"
- 2:00 PM Duncan Steel (University of Michigan)
"Quantum Dot Qubits --- Experiments"
- 3:00 PM Coffee Break (337 West hall)**
- 3:30 PM Jun Ye (University of Colorado)
"Optical Lattice of Sr"
- 4:30 PM Poster Presentations and Discussions (in hall outside of lecture hall)
- 5:30 PM Poster Session Concludes**

WEDNESDAY, JUNE 18TH

- 9:00 AM Full Breakfast (337 West hall)**
- 9:30 AM Barbara Terhal (IBM Research)
"Fault Tolerant Quantum Computation"
- 10:30 AM Jun Ye (University of Colorado)
"Cold and Ultracold Molecules"

11:30 AM LUNCH BREAK

- 1:00 PM Wojciech Zurek (Los Alamos National Lab)
"Decoherence and Beyond"
- 2:00 PM David Weiss (Pennsylvania State University)
"Neutral Atom Quantum Information"
- 3:00 PM Coffee Break (337 West hall)**
- 3:30 PM Mikhail Lukin (Harvard University)
"Quantum Networking with Atomic Ensembles & Diamonds"
- 4:30 PM Aephraim Steinberg (University of Toronto)
"Optical Quantum Information Processing"
- 5:30 PM Talks Conclude**

THURSDAY, JUNE 19TH

- 9:00 AM Full Breakfast (337 West hall)**
- 9:30 AM Wojciech Zurek (Los Alamos National Lab)
"Decoherence and Beyond"

10:30 AM Mikhail Lukin (Harvard University)
"Quantum Networking with Atomic Ensembles & Diamonds"

11:30 AM LUNCH BREAK

1:00 PM David Weiss (Pennsylvania State University)
"Neutral Atom Quantum Information"

2:00 PM Sankar Das Sarma (University of Maryland)
"Topological Quantum Computation and Beyond"

3:00 PM Coffee Break (337 West hall)

3:45 PM Contributed 20 Minute Talks

Jason Kestner (University of Michigan)
"Effective Low-Dimensional Hamiltonian for Strongly Interaction Ultracold Gas"

Wei Zhang (University of Michigan)
2D BCS-BEC Crossover and BKT Transition for Strongly Interacting Fermi Gas"

Rachel Sapiro (University of Michigan)
"BEC Experiments at Michigan (Bloch Oscillation etc.)"

5:00 PM Raymond Laflamme (University of Waterloo)
"NMR Quantum Information Processing"

6:00 PM Talks Conclude

FRIDAY, JUNE 20TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM Mikhail Lukin (Harvard University)
"Quantum Networking with Atomic Ensembles & Diamonds"

10:30 AM Sankar Das Sarma (University of Maryland)
"Topological Quantum Computation and Beyond"

11:30 AM LUNCH BREAK

1:00 PM Raymond Laflamme (University of Waterloo)
"NMR Quantum Information Processing"

2:00 PM David Weiss (Pennsylvania State University)
"Neutral Atom Quantum Information"

3:00 PM Coffee Break (337 West hall)

3:30 PM Hans Peter Büchler (University of Stuttgart)
“Cold Polar Molecules and their Applications for Quantum Information”

4:30 PM Week 1 Talks Conclude

CANOE TRIP, Saturday, June 21st at 10:00am
See Welcoming Memo for further details

MONDAY, JUNE 23RD

9:00 AM Full Breakfast (337 West hall)

9:30 AM David DiVincenzo (IBM Research)
“*Superconducting Qubits*”

10:30 AM Luis Orozco (University of Maryland)
“*Cavity QED and its Applications for Quantum Information*”

11:30 AM LUNCH BREAK

1:00 PM Eric Adelberger (University of Washington)
“*Test of Equivalence Principle*”

2:00 PM Hans Peter Büchler (University of Stuttgart)
“*Cold Polar Molecules and their Applications for Quantum Information*”

3:00 PM Coffee Break (337 West hall)

3:30 PM Contributed 20 minute Talks

Xiaodong Xu (University of Michigan)
“*Experiments on Spin Manipulation in Quantum Dots*”

Kelly Younge (University of Michigan)
“*Blockade Experiments with Rydberg Atoms*”

Maxime Boissonneault (University of Sherbrooke)
“*Circuit Quantum Electrodynamics: Beyond the Linear Dispersive Limit*”

4:30 PM Poster Presentations and Discussions

5:30 PM Poster Session Concludes

TUESDAY, JUNE 24TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM David DiVincenzo
“*Superconducting Qubits*”

10:30 AM Eric Cornell (University of Colorado)
“*Precision Measurements*”

11:30 AM LUNCH BREAK

1:00 PM Eric Adelberger (University of Washington)
“*Sub-Millimeter Tests of the Gravitational Inverse-Square Law*”

2:00 PM Hans Peter Büchler (University of Stuttgart)
“*Cold Polar Molecules and their Applications for Quantum Information*”

3:00 PM Coffee Break (337 West hall)

3:30 PM Lius Orozco (University of Maryland)
“*Cavity QED and its Applications for Quantum Information*”

4:30 PM Poster Presentations and Discussions

5:30 PM Poster Session Concludes

WEDNESDAY, JUNE 25TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM David DiVincenzo (IBM Research)
“*Superconducting Qubits*”

10:30 AM Eric Adelberger (University of Washington)
“*Planck Scale Test of Lorentz Invariance with a Spin Pendulum*”

11:30 AM LUNCH BREAK

1:00 PM Luis Orozco (University of Maryland)
“*Cavity QED and its Applications for Quantum Information*”

2:00 PM Eric Cornell (University of Colorado)
“*EDM*”

3:00 PM Coffee Break (337 West hall)

3:30 PM Zheng-Tian Lu (University of Chicago)
“*Spectroscopy of Radioactive Atoms and its Applications*”

4:30 PM Poster Presentations and Discussions

5:30 PM Poster Session Concludes

THURSDAY, JUNE 26TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM James Hartle (UCSB)
“*Quantum Mechanics in the Light of Quantum Cosmology*”

10:30 AM Chris Monroe (University of Maryland)
“*Quantum Networking with Trapped Ions*”

11:30 AM LUNCH BREAK

1:00 PM Luis Orozco (University of Maryland)
“*Parity Violation on Francium*”

2:00 PM Zheng-Tian Lu (University of Chicago)
“*Spectroscopy of Radioactive Atoms and its Applications*”

3:00 PM Coffee Break (337 West hall)

3:30 PM Contributed 20 Minute Talks

Michael Bishof (University of Chicago, Argonne National Lab)
“*Observation of Allowed but Highly Suppressed Transitions in HE-3*”

Tobias Kampschulte (University of Bonn, Germany)
“*Measuring the Coupling Strength of Single Atoms to the Field of a High-Finesse Optical Resonator*”

4:30 PM Poster Presentations and Discussions

5:30 PM Poster Session Concludes

FRIDAY, JUNE 27TH

9:00 AM Full Breakfast (337 West hall)

9:30 AM James Hartle (UCSB)
“*Quantum Mechanics in the Light of Quantum Cosmology*”

10:30 AM Luis Orozco (University of Maryland)
“*Parity Violation on Francium*”

11:30 AM LUNCH BREAK

1:00 PM Zheng-Tian Lu (University of Chicago)
“*Spectroscopy of Radioactive Atoms and its Applications*”

2:00 PM Chris Monroe (University of Maryland)
“*Quantum Networking with Trapped Ions*”

3:00 PM Coffee Break (337 West hall)

3:30 PM Summer School Concludes