

Quantum Thermodynamics: Coherence, Flux, and Heat Engine Efficiency

MIT, Room 4-270

SATURDAY, OCTOBER 10, 2015

- 8:30-8:50 Registration
- 8:50-9:00 Opening Remarks
- 9:00-9:50 Marlan Scully, Texas A&M University
Quantum Thermodynamics: Recent Results and Open Questions
- 9:50-10:20 Dazhi Xu, Massachusetts Institute of Technology
Non-equilibrium behaviors of the quantum heat engine: Polaron effects and time-dependent control
- 10:20-10:40 **Coffee Break**
- 10:40-11:30 Ronnie Kosloff, Hebrew University of Jerusalem
Quantum equivalence and quantum signatures in heat engines and refrigerators
- 11:30-12:00 Erez Boukobza, Tel Aviv University
Thermodynamics of light-matter interactions: attenuation and amplification, the Carnot limit and beyond
- 12:00 PM **LUNCH BREAK**
- 1:00-1:50 Tobias Brandes, Technical University of Berlin
From quantum phase transitions to Maxwell's demon
- 1:50-2:20 Javier Cerrillo, Technical University of Berlin
Non-Markovian Quantum Transport in the Strong Coupling Regime
- 2:20-2:40 **Coffee Break**
- 2:40-3:30 Andreas Buchleitner, Albert-Ludwigs University of Freiburg
Transport on network-like structures – from light-harvesting to boson sampling
- 3:30-4:00 Aurélie Chenu, University of Toronto
Quantum Dynamics of Photosynthetic Light-Harvesting Complexes
- 4:00 PM **POSTER SESSION-Room 4-265**

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SUNDAY, OCTOBER 11, 2015

- 9:00-9:50 Michael Thoss, Friedrich-Alexander University of Erlangen-Nuremberg
Quantum transport in molecular junctions: Vibrational effects and Transient Phenomena
- 9:50-10:20 Chern Chuang, Massachusetts Institute of Technology
Quantum transport in spin ladders and exciton lattices
- 10:20-10:50 Mattia Walschaers, Albert-Ludwigs University of Freiburg
Enhanced Currents of Non-interacting Indistinguishable Particles
- 10:50-11:10 **Coffee Break**
- 11:10-11:40 Adolfo del Campo, University of Massachusetts, Boston
A Many-Particle Quantum Heat Engine
- 11:40-12:10 Martin Bruderer, Institute for Theoretical Physics, Ulm University
Controlled heat transport and heat engines at the nanoscale
- 12:10-12:40 Konstantin Dorfman, University of California, Irvine
Characterizing quantum coherence enhanced Quantum Heat Engines by multidimensional Raman Spectroscopy
- 12:40 **Closing Remarks**
