Monday, Jun 25, 2018

Session Chair: Jukka Pekola (Aalto U)

8:50am Lars Bildsten (KITP) Welcome
9:00am Irfan Siddiqi (UC Berkeley) The Evolution of Quantum Trajectories: From Observation to Feedback
9:45am Eric Lutz (U Stuttgart) Irreversibility and the quantum arrow of time

Morning Break

11:00am Adolfo del Campo (UMass Boston) Quantum thermodynamics of complex systems
11:45am Rui Sampaio (Aalto U) The Impossible Quantum Work Distribution
12:15pm Javier Cerrillo (TU Berlin) Fluctuation theorems for non-equilibrium

Lunch Break

Session Chair: W. Zurek (Los Alamos National Lab, US)

2:00pm Juan Pablo Paz (U de Buenos Aires) Cooling a quantum Oscillator
2:45pm André Carvalho (Griffith U) Quantum heat engine operating between thermal and spin reservoirs

Afternoon Break

3:15pm

3:45pm Kavan Modi (Monash U) Complete framework for non-Markovian quantum processes: A path towards quantum stochastic energetics
4:15pm Alessandro Romito  
(Lancaster U)  
Energy exchange in quantum measurement processes: from heat and work tracking to a repeated-measurement heat engine

4:45pm Caio Lewenkopf  
(U Federal Fluminense)  
Landauer-Büttiker Approach to Strongly Coupled Quantum Thermodynamics: Entropy Evolution

5:30pm

**SHUTTLE TO BWSCI**

**Tuesday, Jun 26, 2018**

9:00am Benjamin L. Lev (Stanford U)  
Thermalization near Integrability in a Dipolar Quantum Newton's Cradle

9:45am Ulrich Schneider (U Cambridge)  
Quantum thermodynamics (and its breakdown) in optical lattices

10:30am  
**Morning Break**

11:00am Ivan Khaymovich  
(Max Planck Dresden)  
Stochastic thermodynamics in single electron circuits

11:45am David Jennings (U Oxford)  
Coherent majorization and a complete set of entropic conditions for quantum thermodynamics

12:15pm Philippe Faist (Caltech)  
Asymptotically reversible thermodynamic simulation of quantum channels

12:45pm  
**Lunch Break**

**Poster session**

3:15pm  
**Afternoon Break**

5:30pm  
**RECEPTION**

6:00pm  
**SPECIAL EVENTS DINNER**

8:00pm  
**SHUTTLE TO BWSCI**

**Wednesday, Jun 27, 2018**

Session Chair: Robert Alicki (U Gdansk, Poland)
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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9:00am</td>
<td>Alexia Auffèves (CNRS and U Grenoble Alpes)</td>
<td>Energetic footprints of quantum noise</td>
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<tr>
<td>9:45am</td>
<td>Dzmitry Matsukevich (NU Singapore)</td>
<td>Quantum absorption refrigerator with trapped ions</td>
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<td>10:30am</td>
<td>Morning Break</td>
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<tr>
<td>11:00am</td>
<td>Masahito Ueda (U Tokyo)</td>
<td>Atypicality of most few-body observables</td>
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<td>11:45am</td>
<td>Rui Pan (Peking U)</td>
<td>Experimental test of the differential fluctuation theorem and a generalized Jarzynski equality for arbitrary initial states</td>
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<td>12:15pm</td>
<td>Matteo Lostaglio (ICFO)</td>
<td>Quantum fluctuation theorems, contextuality and work quasi-probabilities</td>
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<tr>
<td>12:45pm</td>
<td>Lunch Break</td>
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<tr>
<td>2:00pm</td>
<td>FREE AFTERNOON-Shuttle Available to BWSCI</td>
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**Thursday, Jun 28, 2018**

**Session Chair: Janet Anders (U Exeter, UK)**

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9:00am</td>
<td>Ferdinand Schmidt-Kaler (J. Gutenberg U.)</td>
<td>A single ion spin heat engine coupled to a harmonic oscillator ?ywheel</td>
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<tr>
<td>9:45am</td>
<td>Roberta Zambrini (IFISC)</td>
<td>Collective dissipation: Dynamic and thermodynamic effects</td>
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<tr>
<td>10:30am</td>
<td>Morning Break</td>
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<tr>
<td>11:00am</td>
<td>Roberto M. Serra (U Federal do ABC)</td>
<td>Experimental implementation of a quantum heat engine and its frictionless version</td>
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<td>11:45am</td>
<td>Kater Murch (Washington U)</td>
<td>Information gain and loss for a quantum Maxwell's demon</td>
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<tr>
<td>12:15pm</td>
<td>Karen Hovhannisyan (Aarhus U)</td>
<td>Autonomous thermal rotor in the quantum regime</td>
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<td>12:45pm</td>
<td>Lunch Break</td>
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**Session Chair: Marcos Rigol (Penn State, US)**

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>2:00pm</td>
<td>Jörg Schmiedmayer (TU Wein)</td>
<td>One-dimensional atomic superfluids as a model system for quantum thermodynamics</td>
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</table>
2:45pm Maxime Richard  
(CNRS - Institut Néel)  
Physics of heat transfer with a nonequilibrium quantum fluid of polaritons

3:15pm Afternoon Break

3:45pm Mari Carmen Bañuls  
(Max Planck Garching)  
Using Matrix Product Operators for non-equilibrium problems
4:30pm Nicole Yunger Halpern (Caltech)  
MBL-mobile: Many-body-localized engine
5:00pm Elisa Bäumer (ETH Zürich)  
Partial Thermalizations Allow for Optimal Thermodynamic Processes

5:30pm Reception

6:00pm Special Events Dinner

8:00pm Shuttle to BWSCI

Friday, Jun 29, 2018

Session Chair: Dzmitry Matsukevich (NU Singapore)

9:00am Nikolaj Kiesel (U Vienna)  
Exploring the thermodynamics of small systems with levitated optomechanics
9:45am Tobias Donner (ETH Zürich)  
Driven-dissipative crystals of matter and light

10:30am Morning Break

11:00am Michele Campisi (U Florence)  
Quantum Measurement Cooling
11:45am Claudia Clarke  
(U College London)  
Dissipation production in a closed two-level quantum system as a test of the observability of the dynamics
12:15pm Felix Binder  
(Nanyang Technological U)  
Thermodynamics of causal modelling
12:45pm Closing remarks
12:50pm Lunch Break

2:00pm CONFERENCE ENDS-SHUTTLE TO BWSCI *Also available to SB Airport and SB Airbus, Goleta location (See Registration Desk BEFORE FRIDAY to sign up.)