

COST Action MP1209 "Thermodynamics in the Quantum Regime" Newsletter
Friday June 19th 2015

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New COST MP1209 Project Administrator

I would like to welcome Sandra Howsley the new project administrator for the COST MP1209 project. Sandra will be working Fridays through June and then her days will be Wednesday & Thursday. Sandra can also be contacted via email at costmp1209@gmail.com.

Forthcoming Events

Workshop on Thermodynamics and Nonlinear Dynamics in the Information Age

13-17 July 2015, Telluride, USA

<https://www.telluridescience.org/meetings/workshop-details?wid=548>

COSTMP1209 – Third Quantum Thermodynamics Conference "Quantum

Thermodynamics, Quantum Information" is being organised by a group of CNRS researchers - Alexia Auffeves (Institute Néel, Grenoble), Maxime Clusel (Laboratoire Charles Coulomb, Montpellier), Benjamin Huard (LPA, Ecole Normale Supérieure, Paris), Sébastien Tanzilli (Nice University) and Robert Whitney (LPMMC, Grenoble). It will be held from 11-16 October 2015 in Porquerolles, France.

The meeting website is <http://q-thermo3.sciencesconf.org/>.

The 3rd Quantum Thermodynamics Conference is intended to gather experts in the fields of quantum thermodynamics and quantum information, both theorists and experimentalists. The goal of the event is to foster crossed fertilization between the different communities. Potential experiments in the field will be particularly considered, building on the wide range of devices able to process quantum information, whose recent developments have been spectacular.

COSTMP1209 – 6th Working Group Meeting

21-24 February 2016, Atard, Malta

The meeting website is to be announced.

COSTMP1209 – 4th Quantum Thermodynamics Conference

8-15 May 2016, Ettore Majorana Centre, Erice, Italy

The meeting website is to be announced.

COSTMP1209 – Training School- Thermodynamics and non-equilibrium phenomena for quantum interfaces of light and matter.

Aug/Sept 2016, Institute of Theoretical and Applied Physics (ITAP), Turunc/Marmaris, Turkey

The meeting website is to be announced.

Arctic School on Open Quantum Systems

14-18 December 2015, Kilpisjarvi Biological Station, Helsinki, Finland.

Further details can be found at:

http://cqe.aalto.fi/en/current/events/arctic_school_2015/

STSM Update

The call dates for year 3 STSMs have now been released and details can be found on the website <http://blogs.exeter.ac.uk/qut/>

The next STSM call opens on the 23rd June and applications must be received by 7th July. STSM applications are a competitive process so, if you are considering applying, please give yourself the best chance of success by ensuring your project description is as strong as possible.

Website

Our website has now been slightly updated & moved to be hosted by the University of Exeter. The new url is <http://blogs.exeter.ac.uk/qut/>.

If you go to the old url then you should be automatically redirected to the new site.

Cost Petition

The COST Framework is unfortunately facing a budget cut. If this occurs, it would impact the number of future COST Actions and most likely lower the funds available per COST Action. A petition for a stable and sufficient budget is available at <https://forms.cost.eu/petition> and we kindly ask you to join the 4100 signatures already collected and show your support.

Wikipedia Petition

Wikipedia has recently rejected an article on Quantum Thermodynamics because the editor believes a similar article already exists. More specifically, there is a redirection from quantum thermodynamics to quantum statistical mechanics, which is not relevant. In order to change the editors' verdict, anyone familiar with Wikipedia can contribute to the discussion at https://en.wikipedia.org/wiki/Draft:Quantum_thermodynamics.

Administrative Information

Please send any items for inclusion in the next newsletter to costmp1209@gmail.com.

COST Acknowledged Publications

The following COST acknowledged publications have been notified to us since the last newsletter. Please send details of any new COST acknowledged publications to costmp1209@gmail.com.

1. Apollaro, T. J. G., Francica, G., Paternostro, M. & Campisi, M. Work statistics, irreversible heat and correlations build-up in joining two spin chains. 9 (2014). at <<http://arxiv.org/abs/1406.0648>>
2. Batalhao, T. B. *et al.* Irreversibility and the arrow of time in a quenched quantum system. 8 (2015). at <<http://arxiv.org/abs/1502.06704>>
3. Brunelli, M. *et al.* Out-of-equilibrium thermodynamics of quantum optomechanical systems. *New J. Phys.* **17**, 035016 (2015).
4. Campbell, S., De Chiara, G., Paternostro, M., Palma, G. M. & Fazio, R. Shortcut to Adiabaticity in the Lipkin-Meshkov-Glick Model. *Phys. Rev. Lett.* **114**, 177206 (2015).
5. Esposito, M. & Parrondo, J. M. R. Stochastic thermodynamics of hidden pumps. *Phys. Rev. E* **91**, 052114 (2015).
6. Gemmer, J. & Anders, J. From single-shot towards general work extraction in a quantum thermodynamic framework. (2015). at <<http://arxiv.org/abs/1504.05061>>
7. Goold, J., Paternostro, M. & Modi, K. Nonequilibrium Quantum Landauer Principle. *Phys. Rev. Lett.* **114**, 060602 (2015).
8. Hofer, P. P. & Sothmann, B. Quantum heat engines based on electronic Mach-Zehnder interferometers. *Phys. Rev. B* **91**, 195406 (2015).
9. Kammerlander, P. & Anders, J. Quantum measurement and its role in thermodynamics. 5 (2015). at <<http://arxiv.org/abs/1502.02673>>
10. Lorenzo, S., McCloskey, R., Ciccarello, F., Paternostro, M. & Palma, G. M. Landauer's principle in multipartite open quantum system dynamics. 5 (2015). at <<http://arxiv.org/abs/1503.07837>>
11. Nicacio, F., Ferraro, A., Imperato, A., Paternostro, M. & Semião, F. L. Thermal transport in out-of-equilibrium quantum harmonic chains. *Phys. Rev. E* **91**, 042116 (2015).
12. Pigeon, S. *et al.* Dynamical symmetries and crossovers in a three-spin system with collective dissipation. *New J. Phys.* **17**, 015010 (2015).

13. Pigeon, S., Fusco, L., Xuereb, A., De Chiara, G. & Paternostro, M. Thermodynamics of trajectories of a quantum harmonic oscillator coupled to N baths. 5 (2014). at <http://arxiv.org/abs/1411.2637>