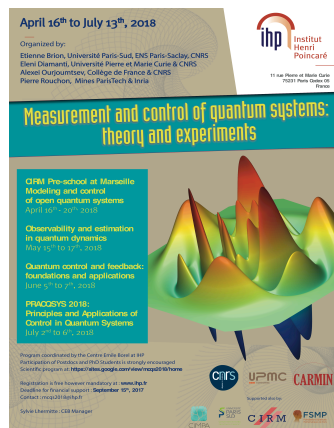


«Measurement and control of quantum systems: theory and experiments»
 Paris April 16th – July 13th, 2018

Workshop «Quantum control and feedback: foundations and applications»
 Paris, June 5th – 7th, 2018
Amphitheater Hermite



All lectures will be videotaped



Organizers: **Alexia Auffèves** (Institut Néel, CNRS/UGA, Grenoble, FR), **Etienne Brion** (University Paris-Sud, ENS Paris-Saclay/CNRS), **Eleni Diamanti** (Sorbonne University Paris/CNRS, FR), **Alexei Ourjoumtev** (Collège de France & CNRS), **Pierre Rouchon** (Mines ParisTech & Inria)

Invited speakers:

Victor Albert (Caltech, US)
Nina Amini (L2S Supelec, FR)
Florent Baboux (MPQ, Univ. Paris Diderot, FR)
Karine Beauchard (ENS Rennes, FR)
Daniel Burgarth (Univ. Aberystwyth, UK)
Gunther Dirr (Univ. Wurzburg, DE)
Raul Garcia Patron (Univ. Libre Bruxelles, BE)
Marco Genoni (Univ. Milano, IT)
Madalin Guta (Univ. Nottingham, UK)
Géraldine Haack (Univ. Genève, CH)

Nikolai Kiesel (Univ. Vienna, AU)
Zaki Leghtas (Mines ParisTech, FR)
Erik Lutz (Univ. Erlangen, DE)
Damian Markham (LIP6, CNRS, Sorbonne Univ., FR)
Hugues Pothier CEA Saclay, FR)
Jason Ralph (Univ. Liverpool, UK)
Mario Sigalotti (CPAM Polytechnique, FR)
Dominique Sugny (Univ. Bourgogne, FR)
Birgitta Whaley (UC Berkeley, US)

PROGRAM

Tuesday June 5th

09.00 am – 09.15 am Registration and welcome coffee – IHP ground floor

09.15 am – 10.00 am **Karine Beauchard** Minimal time for the bilinear control of Schrodinger equations.

10.00 am – 10.45 am **Géraldine Haack** Autonomous quantum thermal machines: How purely dissipative processes can be exploited to generate entanglement .

10.45 am – 11.15 am Coffee break
IHP ground floor

11.15 am – 12.00 pm **Nina Amini** Feedback stabilization of open quantum systems.

12.00 pm – 12.45 pm **Victor Albert** Lindbladans with multiple steady states: theory and applications.

12.45 pm – 02.15 pm Lunch break – Free time

02.15 pm – 03.00 pm **Erik Lutz** Nonequilibrium thermodynamics with feedback.

03.00 pm – 03.45 pm **Dominique Sugny** Optimal control of spin systems with applications in Magnetic Resonance.

03.45 pm – 04.15 pm Coffee break
IHP ground floor

04.15 pm – 05.00 pm **Damian Markham** Measurement based unitary designs and some applications.

05.00 pm – 05.45 pm **Raul Garcia Patron** A quantum information perspective on spectroscopy.

Wednesday June 6th

02.15 pm – 03.00 pm **Nikolai Kiesel** Levitate Cavity Optomechanics.

03.00 pm – 03.45 pm **Marco Genoni** Restoring Heisenberg scaling in noisy quantum metrology by monitoring the environment.

03.45 pm – 04.15 pm Coffee break
IHP ground floor

04.15 pm – 05.00 pm **Jason Ralph** Dynamical model selection and estimation near the quantum-classical boundary.

05.00 pm – 05.45 pm **Madalin Guta** Metrology and metastability in quantum input-output systems.

05.45 pm – 09.00 pm Cocktail Dinner – IHP ground floor

Thursday June 7th

09.15 am – 10.00 am **Zaki Leghtas** Quantum computing with Schrödinger cat states.

10.00 am – 10.45 am **Hugues Pothier** Andreev states probed in a circuit-QED setup.

10.45 am – 11.15 am Coffee break
IHP ground floor

11.15 am – 12.00 pm **Gunther Dirr** Simultaneous control of bilinear systems -- a mathematical challenge arising in QC.

12.00 pm – 12.45 pm **Mario Sigalotti** Exact controllability in projections of the bilinear Schrödinger equation.

12.45 pm – 02.15 pm Lunch break – Free time

02.15 pm – 03.00 pm **Birgitta Whaley**
03.00 pm – 03.45 pm **Florent Baboux**
03.45 pm – 04.15 pm Coffee break
04.15 pm – 05.00 pm **Daniel Burgarth**

Measurement-based Feedback for Remote Entanglement and Continuous Error Correction.
Engineering biphoton frequency correlations in semiconductor waveguides.
IHP ground floor
Dynamical Decoupling of Unbounded Operators.

Abstracts are available on the website of the trimester «Measurement and control of quantum systems: theory and experiments»
<https://sites.google.com/view/mcqs2018/2-workshops/quantum-control-and-feedback-foundations-and-applications>

