

# FQXi-Workshop on Quantum sequential measurements and complexity

Siegen, 22/09/2014-26/09/2014



## Monday, 22.09.2014

9:00	Opening
9:15	<b>A. Cabello:</b> Is the E principle "the" principle for quantum correlations?
10:00	<b>K. Ried:</b> Inferring causal structure: a quantum advantage
10:30	Coffee
11:00	<b>M. Gu:</b> Quantizing statistical complexity - Can quantum mechanics change our notions of what is complex?
11:45	<b>S. Wölk:</b> Hidden Markov models & data analysis in experiments
12:15	Lunch Break
14:30	<b>K. Wiesner:</b> Nature computes: Information processing in quantum dynamical systems
15:15	<b>F. Huber:</b> Quantum exponential families
15:45	Coffee
16:15	<b>A. Monras:</b> Quantum learning of classical stochastic processes: The Completely-Positive Realization Problem
17:00	Break
19:00	Conference Dinner, Upper Castle

## Tuesday, 23.09.2014

9:00	<b>J.A. Larsson:</b> Memory cost of Quantum Contextuality
9:45	<b>P. Blasiak:</b> On a possible ontology of a qubit in the interferometric set-up
10:15	Coffee
10:45	<b>T. Heinosaari:</b> Universality of sequential quantum measurements
11:30	<b>T. Bullock:</b> Let's focus on the Arthurs-Kelly model
12:00	Lunch Break
14:30	<b>C. Emary:</b> Measuring Leggett-Garg inequalities and quantum witnesses
15:15	<b>C Budroni:</b> Temporal quantum correlations and Leggett-Garg inequalities
15:45	Coffee
16:00	<b>F. Vallone:</b> Existence of anticorrelations for LFPs recorded from mice reared in standard conditions and environmental enrichment
16:30	<b>F. Steinhoff:</b> Contextuality inequalities for hypergraph states
17:00	Break

## Wednesday, 24.09.2014

9:00	<b>D. Browne:</b> Non-locality, contextuality and (computational) complexity in measurement-based quantum computation
9:45	<b>I. Appelaniz:</b> Precision bounds for quantum metrology
10:15	Coffee
10:45	<b>C. Lee:</b> TBA
11:00	<b>D. Reitzner:</b> Noise robustness of incompatibility
11:30	<b>R. Uola:</b> Joint measurements and steering
12:00	Lunch Break
16:00	Brewery tour, departure: 15:00

## Conference Dinner

Monday evening, 19:00, Upper Castle (see the map).

## Further activities

- The experimental ion-trapping group from Christof Wunderlich will offer a lab tour on Tuesday 13:30.
- On Wednesday afternoon, there is the possibility to visit of the Krombacher Brewery, details (costs, etc.) will be discussed on Monday.

## Invited speakers & participants

- Pawel Blasiak (Cracow, Poland)
- Dan Browne (London, UK)
- Tom Bullock (York, UK)
- Adan Cabello (Seville, Spain)
- Clive Emary (Hull, UK)
- Mile Gu (Singapore)
- Teiko Heinosaari (Turku, Finland)
- Jan-Ake Larsson (Linköping, Sweden)
- Clarissa Lee (Duke, USA)
- Alex Monras (Barcelona, Spain)
- Daniel Reitzner (Bratislava, Slovakia)
- Katja Ried (Waterloo, Canada)
- Fabio Vallone (Pisa, Italy)
- Karoline Wiesner (Bristol, UK)
- Iagoba Appelaniz (Bilbao, Spain)
- Otfried Gühne (Siegen)
- Costantino Budroni (Siegen)
- Roope Uola (Siegen)
- Felix Huber (Siegen)
- Sabine Wölk (Siegen)
- Frank Steinhoff (Siegen)
- Sanah Altenburg (Siegen)
- Marius Paraschiv (Siegen)
- Nikolai Miklin (Siegen)
- Christina Ritz (Siegen)
- Tristan Kraft (Siegen)
- Jannik Hoffmann (Siegen)

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