

PROGRAM



2016

INTERNATIONAL CONFERENCES

27th

CONCUR2016

International Conference
on Concurrency Theory

14th

FORMATS 2016

International Conference
on Formal Modelling and Analysis of Timed Systems

13th

QEST 2016

International Conference
on Quantitative Evaluation of SysTems

WORKSHOPS

23rd

EXPRESS/SOS2016

International Workshop on Expressiveness
in Concurrency and

13th

Workshop on Structural Operational Semantics

5th

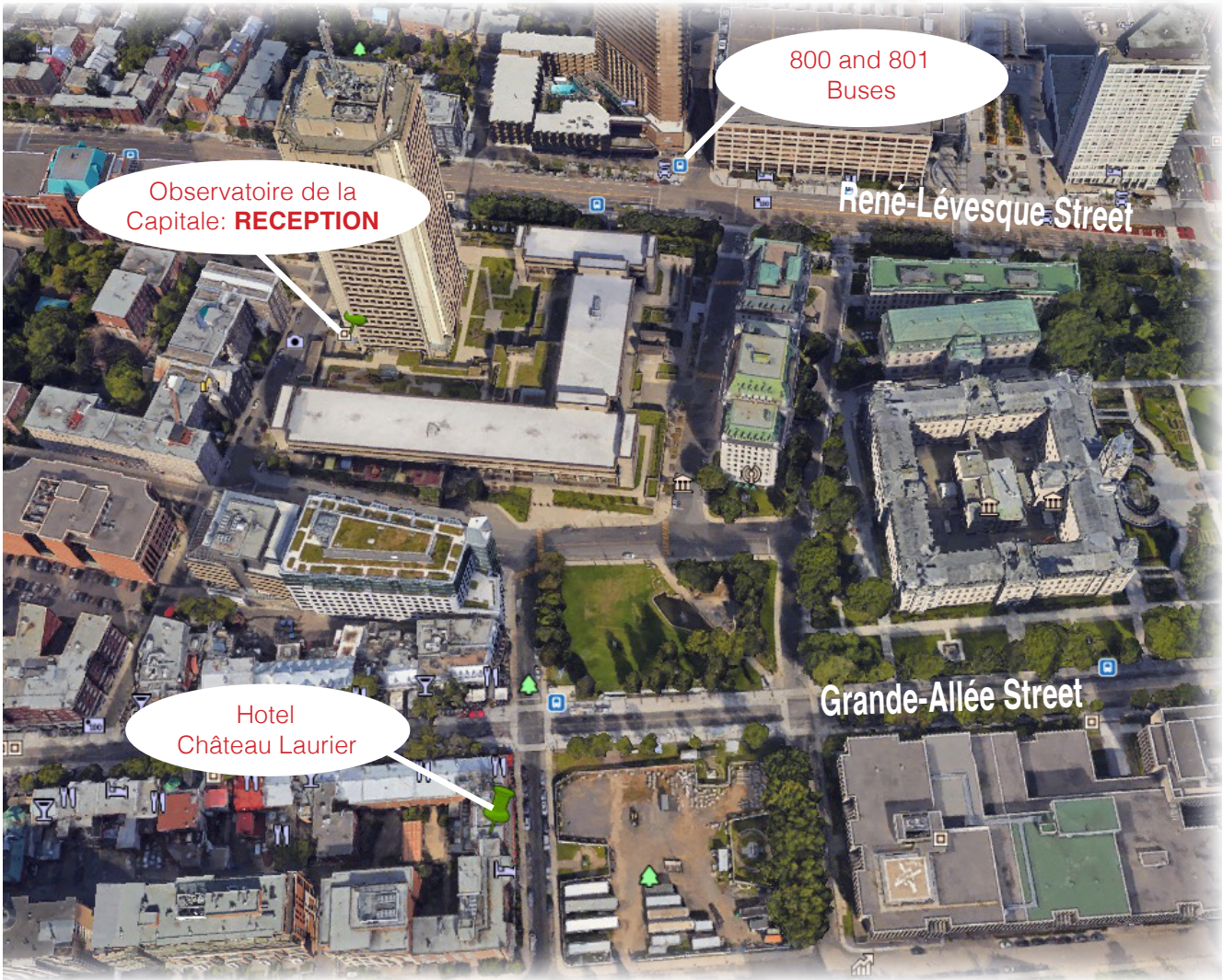
TRENDS

IFIP WG 1.8 Workshop
on Trends in Concurrency Theory



UNIVERSITÉ
LAVAL

Faculté des sciences et de génie
Département d'informatique
et de génie logiciel



Observatoire de la Capitale: **RECEPTION**

800 and 801 Buses

René-Lévesque Street

Hotel Château Laurier

Grande-Allée Street

Dear participant,

Welcome to Quebec City, the capital of the province of Quebec. The city is known for its strong European feel, influenced from its double heritage of French and English. Its name is derived from Algonquin, meaning “where the river narrows”. Indeed, driving an hour or two to the east will show you a part of the river whose locals colloquially refer to “the sea”. As you may have already noticed, Quebec City is fortified, the only city north of Mexico whose walls still exist.

This is the first time that FORMATS and QEST come to Canada, the second time for CONCUR (Toronto, 2008). We hope that you will have a fruitful week, and that you will enjoy what the city has to offer. You may bring your discussions for a walk on the Plains of Abraham, just in the backyard of the conferences site, or down the street, to the old city, where you will also find some of the finest tables in Canada.

We hope that you enjoy your stay, the conferences, and hopefully, the weather.

Josée Desharnais

General chair of CONCUR, FORMATS and QEST



WEEK ORGANISATION :

Josée Desharnais	Université Laval, CA
Andrew Bedford	Université Laval, CA
Nadia Tawbi	Université Laval, CA

Supported by :



Université Laval, CA

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- Mohammad Mousavi, SE

* Chairs

QEST2016

- 8:30 Registration
- 9:20 Opening
- 9:30 Invited Talk. Carey Williamson.
A Stroll Down Speed-Scaling Lane.
- 10:30 Coffee Break
- Markov Processes**
- 11:00 Michalis Michaelides, Dimitrios Milios, Jane Hillston and Guido Sanguinetti. *Property-driven State-Space Coarsening for Continuous Time Markov Chains.*
- 11:30 Elvio Gilberto Amparore and Susanna Donatelli. *Optimal aggregation of components for the solution of Markov Regenerative Processes.*
- 12:00 Elizabeth Polgreen, Viraj Wijesuriya, Sofie Haesaert and Alessandro Abate. *Data-efficient Bayesian verification of parametric Markov chains.*
- 12:30 Lunch
- Probabilistic Reasoning Algorithms**
- 14:00 Ernst Moritz Hahn, Vahid Hashemi, Holger Hermanns and Andrea Turrini. *Exploiting Robust Optimization for Interval Probabilistic Bisimulation.*
- 14:30 Luca Laurenti, Luca Cardelli, Marta Kwiatkowska and Luca Bortolussi. *Approximation of Probabilistic Reachability for Chemical Reaction Networks using the Linear Noise Approximation.*
- 15:00 Javier Esparza, Philipp Hoffmann and Ratul Saha. *Polynomial Analysis Algorithms for Free-choice Probabilistic Workflow Nets.*
- 15:30 Huaming Wu, William Knottenbelt, Katinka Wolter and Yi Sun. *An Optimal Offloading Partitioning Algorithm in Mobile Cloud Computing.*
- 16:00 Coffee Break
- Queueing Models**
- 16:30 Misikir Eyob Gebrehiwot, Samuli Aalto and Pasi Lassila. *Energy-aware server with SRPT scheduling: analysis and optimization.*
- 17:00 Andrea Marin and Sabina Rossi. *Dynamic control of the join-queue lengths in saturated fork-join stations.*
- 17:30 Cheng Feng, Jane Hillston and Daniël Reijlsbergen. *Moment-based Probabilistic Prediction of Bike Availability for Bike-Sharing Systems.*
- 19:00 Welcome Reception: Observatoire de la Capitale

CONCUR2016

- 8:30 Registration
- 9:15 Opening
- 9:30 * Invited Talk. Vincent Danos.
Bayesian Inversion by Omega-Complete Cone Duality.
- 10:30 Coffee Break
- Shared Memory**
- 11:00 Parosh Aziz Abdulla, Mohamed Faouzi Atig, Ahmed Bouajjani and Tuan Phong Ngo. *The Benefits of Duality in Verifying Concurrent Programs under TSO.*
- 11:30 Andreas Haas, Thomas Henzinger, Andreas Holzer, Christoph Kirsch, Michael Lippautz, Hannes Payer, Ali Sezgin, Ana Sokolova and Helmut Veith. *Local Linearizability for Concurrent Container-Type Data Structures.*
- 12:00 Giovanni Bernardi and Alexey Gotsman. *Robustness Against Consistency Models with Atomic Visibility.*
- 12:30 Lunch
- Verification**
- 14:00 Romain Brenguier. *Optimal Assumptions for Synthesis.*
- 14:30 Shaul Almagor, Orna Kupferman and Yaron Velner. *Minimizing Expected Cost Under Hard Boolean Constraints, with Applications to Quantitative Synthesis.*
- 15:00 Tomas Brazdil, Vojtech Forejt, Antonin Kucera and Petr Novotný. *Stability in Graphs and Games.*
- 15:30 Quentin Hautem, Véronique Bruyère and Jean-Francois Raskin. *On the Complexity of Heterogeneous Multidimensional Quantitative Games.*
- 16:00 Coffee Break
- Algorithms and complexity**
- 16:30 Javier Esparza, Denis Kuperberg, Anca Muscholl and Igor Walukiewicz. *Soundness in Negotiations*
- 17:00 Bernd Finkbeiner and Christopher Hahn. *Deciding Hyperproperties.*
- 17:30 Marvin Triebel and Jan Sürmeli. *Homogeneous Equations of Algebraic Petri Nets.*
- 18:00 Uli Schlachter. *Bounded Petri Net Synthesis from Modal Transition Systems is Undecidable.*
- 19:00 Welcome Reception: Observatoire de la Capitale

QEST2016

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8:45 Opening

9:00

Invited Talk. Scott Smolka. *V-Formation as Optimal Control*

10:00 Coffee Break

Sampling, Inference and Optimization Methods

- 10:30 Nicolas Basset, Benoît Barbot, Marta Kwiatkowska and Marc Beunardeau. *Uniform Sampling for Timed Automata with Application to Language Inclusion Measurement.*
- 11:00 Benjamin Lucien Kaminski, Joost-Pieter Katoen and Christoph Matheja. *Inferring Covariances for Probabilistic Programs.*
- 11:30 Steffen Bondorf and Jens Schmitt. *Should Network Calculus Relocate? An Assessment of Current Algebraic and Optimization-based Analyses.*

Modeling timed Phenomena

- 10:30 Leonid Dworzanski. *Consistent Timed Semantics for Nested Petri Nets with Restricted Urgency*
- 11:00 Étienne André, Didier Lime and Olivier H. Roux. *On the Expressiveness of Parametric Timed Automata.*
- 11:30 Olga Gadyatskaya, Rene Rydhof Hansen, Mads Chr. Olesen, Kim Guldstrand Larsen, Axel Legay and Danny Bogsted Poulsen. *Modelling Attack-Defense Trees using Timed Automata.*

Distributed Systems

- 10:30 Borzoo Bonakdarpour, Pierre Fraigniaud, Sergio Rajsbaum, David A. Rosenblueth and Corentin Travers. *Decentralized Asynchronous Crash-Resilient Runtime Verification.*
- 11:00 Loig Jezequel and Didier Lime. *Lazy Reachability Analysis in Distributed Systems.*
- 11:30 Roly Perera, Deepak Garg and James Cheney. *Causally Consistent Dynamic Slicing.*
- 12:00 Christina Rickmann, Christoph Wagner, Uwe Nestmann and Stefan Schmid. *Topological Self Stabilization with Name-Passing Process Calculi.*

12:00 Lunch

12:00 Lunch

Markov Decision Processes and Markovian Analysis

- 13:30 Sofie Haesaert, Alessandro Abate and Paul Van den Hof. *Verification of General Markov Decision Processes by Approximate Similarity Relations and Policy Refinement.*
- 14:00 Ezio Bartocci, Luca Bortolussi, Tomas Brazdil, Dimitrios Miliotis and Guido Sanguinetti. *Policy Learning for Time-bounded Reachability in Continuous-Time Markov Decision Processes via Doubly-Stochastic Gradient Ascent.*
- 14:30 Peter Buchholz, Tuğrul Dayar, Jan Krieger and M. Can Orhan. *Compact Representation of Solution Vectors in Kronecker-based Markovian Analysis.*

15:30 Excursion and Banquet

12:30 Lunch

15:30 Excursion and Banquet

15:30 Excursion and Banquet



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9:30 **Invited Talk.** Ufuk Topcu. *Adaptable Yet Provably correct Autonomous Systems*

9:30 **Invited Talk.** Marc Shapiro. *Consistency in 3D.*

10:30 **Coffee Break**

Networks

11:00 Michael Rausch, Brett Feddersen, Ken Keefe and William Sanders. *A Comparison of Different Intrusion Detection Approaches in an Advanced Metering Infrastructure Network usin ADVISE.*

11:30 Jan Kriege and Peter Buchholz. *Traffic Modeling with Phase-Type Distributions and VARMA Processes.*

12:30 **Lunch**

Performance Modeling

14:00 Enno Ruijters, Dennis Guck, Peter Drolenga, Margot Peters and Mariëlle Stoelinga. *Maintenance analysis and optimization via statistical model checking: Evaluation of a train's pneumatic compressor.*

14:30 Giovanni Neglia, Sara Alouf, Abdulhalim Dandoush, Sebastien Simoens, Pierre Dersin, Alina Tuholukova, Jérôme Billion and Pascal Derouet. *Performance Evaluation of Train Moving-Block Control.*
Simon Theissing and Stefan Haar. *Decoupling Passenger Flows for Improved Load Prediction.*

16:00 **Coffee Break**

Tools Demos (4 pages papers)

16:30 Olga Gadyatskaya, Ravi Jhawar, Piotr Kordy, Karim Lounis, Sjouke Mauw and Rolando Trujillo-Rasua. *Attack Trees for Practical Security Assessment: Ranking of Attack Scenarios with ADTool 2.0 .*

16:50 Maria Simonetta Balsamo, Andrea Marin and Ivan Stojic. *Spnps: A tool for Perfect Sampling in Stochastic Petri Nets.*

17:10 Jane Hillston and Michele Loreti. *CARMA Eclipse plug-in: A tool supporting design and analysis of Collective Adaptive Systems .*

17:30 **Closing Session**

Stochasticity and Hybrid Control

11:00 Pedro R. D'Argenio, Matias David Lee and Raul E. Monti. *Input/Output Stochastic Automata: Compositionality and Determinism.*

11:30 Susmit Jha and Vasumathi Raman. *Towards Automated Synthesis of Stochastic Linear Hybrid Systems Controllers.*

12:00 Majid Zamani, Soumyajit Dey, Sajid Mohamed, Pallab Dasgupta and Manuel Mazo Jr. *Scheduling of Controllers' Update-rates for Residual Bandwidth Utilization.*

12:30 **Lunch**

Real-Time Verification and Synthesis

14:00 Thomas Brihaye, Morgane Estievenart, Gilles Geeraerts, Hsi-Ming Ho, Benjamin Monmege and Nathalie Sznajder. *Real-time Synthesis is Hard!*

14:30 Masaki Waga, Takumi Akazaki and Ichiro Hasuo. *A Boyer-Moore Type Algorithm for Timed Pattern Matching.*

15:00 Raymond Devillers and Hanna Kludel. *Abstraction Strategies for Computing Travelling or Looping Durations in Networks of Timed Automata.*

15:30 Zhengkui Zhang, Brian Nielsen and Kim Guldstrand Larsen. *Distributed Algorithms for Time Optimal Reachability Analysis.*

16:00 **Coffee Break**

Panel discussion

Panelists: Gilles Geeraerts, Boudewijn Haverkort (by electronic media), Claude Jard, Oded Maler, Oleg Sokolsky.

Distances for Probabilistic Systems

11:00 Przemyslaw Daca, Thomas Henzinger, Jan Kretinsky and Tatjana Petrov. *Linear Distances between Markov Chains*

11:30 Giorgio Bacci, Giovanni Bacci, Kim Guldstrand Larsen and Radu Mardare. *Complete Axiomatization of the Bisimilarity Distance on Markov Chains.*

12:00 Qiyi Tang and Franck van Breugel. *Computing Probabilistic Bisimilarity Distance via Policy Iteration.*

12:30 **Lunch**

Categories

14:00 Fredrik Dahlqvist, Vincent Danos and Ilias Garnier. *Robustly Parameterised Higher-order Probabilistic Models.*

14:30 Jérémy Dubut, Eric Goubault and Jean Goubault-Larrecq. *Bisimulations and Unfolding in P-accessible Categorical Models.*

15:00 Tomasz Brengos and Marco Peressotti. *A uniform Framework for Timed Automata.*

15:30 Natsuki Urabe, Shunsuke Shimizu and Ichiro Hasuo. *Coalgebraic Trace Semantics for Büchi and Parity Automata.*

16:00 **Coffee Break**

Timed and Parametrized Systems

16:30 S. Akshay, Paul Gastin and Krishna S. *Analyzing Timed Systems Using Tree Automata.*

17:00 Antonia Lechner, Richard Mayr, Joel Ouaknine, Amaury Pouly and James Worrell. *Model Checking Flat Freeze LTL on One-Counter Automata.*

17:30 Igor Konnov, Tomer Kotek, Qiang Wang, Helmut Veith, Simon Bludze and Joseph Sifakis. *Parameterized Systems in BIP: Design and Model Checking.*

18:00 Amélie David, Francois Laroussinie and Nicolas Markey. *On the expressiveness of QCTL.*

Friday, AUGUST 26

FORMATS2016

9:00 **Invited Talk.** Oleg Sokolsky. *Platform-Specific Code Generation from Platform-Independent Timed Models.*

10:00 **Coffee Break**

Workload Analysis

10:30 Gustavo Patino and Wang Jiang Chau. *Scenario-Aware Workload Characterization based on a Max-Plus Linear Representation.*

11:00 Michael Mendler, Partha Roop and Bruno Bodin. *A Novel WCET semantics of Synchronous Programs.*

11:30 Stefanos Skalistis and Alena Simalatsar. *Worst-case Execution Time Analysis for Many-Core Architectures with NoC.*

12:00 Max Kanovich, Tajana Ban Kirigin, Vivek Nigam, Andre Scedrov and Carolyn Talcott. *Timed Multiset Rewriting and the Verification of Time-Sensitive Distributed Systems.*

12:30 **Lunch**

CONCUR2016

*9:00 **Invited Talk.** Francesca Rossi. *Ethical Preference-Based Decision Support System*

Logic

10:30 Ross Horne, Alwen Tiu, Bogdan Aman and Gabriel Ciobanu. *Private Names in Non-Commutative Logic.*

11:00 Pierre Clairambault and Simon Castellan. *Causality vs. Interleavings in Concurrent Game semantics.*

11:30 Marco Carbone, Sam Lindley, Fabrizio Montesi, Carsten Schuermann and Philip Wadler. *Coherence Generalises Duality: a Logical Explanation of Multiparty Session Types.*

12:00 Daniel Hausmann, Lutz Schröder and Christoph Egger. *Global Caching for the Alternation-free Coalgebraic μ -Calculus.*

12:30 **Lunch**

Probability

14:00 Konstantinos Chatzikokolakis, Catuscia Palamidessi and Valeria Vignudelli. *Up-to techniques for Generalized Gisimulation Metrics.*

14:30 Valentina Castiglioni, Daniel Gebler and Simone Tini. *Modal Decomposition on Nondeterministic Probabilistic Processes.*

15:00 Nathalie Bertrand, Serge Haddad and Engel Lefauchaux. *Diagnosis in Infinite-State Probabilistic Systems.*

15:30 **Closing and Coffee Break**

Monday, AUGUST 22

EXPRESS/SOS

- 9:45 **Welcome**
- 10:00 **Invited Talk.** Joost-Pieter Katoen. *What Do Probabilistic Programs Mean?*
- 11:00 **Coffee Break**
- 11:30 Eduard Baranov and Simon Bliudze. *A Note on the Expressiveness of BIP.*
- 12:00 Xian Xu. *Higher-order Processes with Parameterization over Names and Processes.*
- 12:30 **Lunch**
- 14:30 Sanjiva Prasad and Lenore Zuck. *Self-Similarity breeds Resilience.*
- 15:00 Matias David Lee and Bas Luttik. *Unique Parallel Decomposition for the Pi-calculus.*
- 15:30 Paola Giannini and Mariangiola Dezani-Ciancaglini. *Reversible Multiparty Sessions with Checkpoints.*
- 16:00 **Coffee Break**

Saturday, AUGUST 27

TRENDS

- 9:00 **Invited Talk.** Frank van Breugel. *Towards a Quantitative Theory of Concurrent Probabilistic Systems.*
- 9:45 **Invited Talk.** Dana Fisman. *Inferring Regular Languages and omega-Languages.*
- 10:30 **Coffee Break**
- 11:00 **Invited Talk.** Philippa Gardner. *A Concurrent Specification of POSIX.*
- 11:45 **IFIP WG 1.8 Business Meeting** (open to all)
- 13:00 **Lunch**

PROGRAM Overview

	Monday 22	Tuesday 23	Wednesday 24	Thursday 25	Friday 26	Saturday 27						
	EXPRESS/SOS	QEST	CONCUR	QEST	FORMATS	CONCUR	QEST	FORMATS	CONCUR	FORMATS	CONCUR	TRENDS
8:30		Registration		Opening/registration								
9:00		9:15 Opening		I						I	I	
9:30		I	I									I
10:00	Opening-I			Coffee Break						Coffee Break		
10:30		Coffee Break					Coffee Break					Coffee Break
11:00	Coffee			3T	3T	4T	2T			4T	4T	
11:30	2T	3T	3T					3T	3T	4T	4T	I
12:00				Lunch						Business Meeting		
12:30	Lunch	Lunch					Lunch			Lunch		
13:00				Lunch						Lunch		
13:30												
14:00				3T								
14:30							3T				3T	
15:00		4T	4T					4T	4T			
15:30	3T			Excursion and Banquet								Coffee Break
16:00		Coffee Break					Coffee Break					
16:30	Coffee Break			Excursion and Banquet			3TD	Panel				
17:00		3T	4T	Excursion and Banquet							4T	
17:30				Excursion and Banquet			Closing					
18:00				Excursion and Banquet								
19:00		Reception		Excursion and Banquet								

2T Two Talks
 3T Three Talks
 4T Four Talks

I Invited Talk
 3TD Three Tool Demos

