

2011 Eighth International Conference on Quantitative Evaluation of Systems

(QEST 2011)

**Aachen, Germany
5 – 8 September 2011**



IEEE Catalog Number: CFP11348-PRT
ISBN: 978-1-4577-0973-9

2011 Eighth International Conference on Quantitative Evaluation of SysTems

QEST 2011

Table of Contents

Message from the General Chair.....	viii
Message from the Program Committee Co-chairs.....	ix
Organizing Committee.....	xi
Technical Program Committee.....	xii
Reviewers.....	xiii

Session: Mean-Field and Fluid Analysis

Hybrid Limits of Continuous Time Markov Chains	3
<i>Luca Bortolussi</i>	
Fluid Limits Applied to Peer to Peer Network Analysis	13
<i>Laura Aspirot, Ernesto Mordecki, and Gerardo Rubino</i>	
Fluid Analysis of Queueing in Two-Stage Random Environments	21
<i>Giuliano Casale and Mirco Tribastone</i>	

Session: Invited Talk

Temperature-aware Real-Time Scheduling - Extended Abstract	33
<i>Lothar Thiele</i>	

Session: Measurements

A Tool for Scalable Profiling and Tracing of Java and Native Code Interactions	37
<i>Parijat Dube, Seetharami Seelam, Yanbin Liu, Megumi Ito, Thomas Ling, Michel Hack, Liana Fong, Graeme Johnson, Michael Dawson, Li Zhang, and Yuqing Gao</i>	
A Hybrid Approach for Large Cache Performance Studies	47
<i>David Daly, Parijat Dube, Kaoutar El Maghraoui, Dan Poff, and Li Zhang</i>	

Session: Stochastic Hybrid Systems

Adaptive Gridding for Abstraction and Verification of Stochastic Hybrid Systems	59
<i>Sadegh Esmaeil Zadeh Soudjani and Alessandro Abate</i>	
Game-based Abstraction and Controller Synthesis for Probabilistic Hybrid Systems	69
<i>Ernst Moritz Hahn, Gethin Norman, David Parker, Björn Wachter, and Lijun Zhang</i>	

Discrete-Time Verification and Control for Probabilistic Rectangular Hybrid Automata	79
<i>Jeremy Sproston</i>	
Session: Model Checking	
MARCIE - Model Checking and Reachability Analysis Done EffICIENTly	91
<i>Martin Schwarick, Monika Heiner, and Christian Rohr</i>	
Probe Automata for Passage Time Specification	101
<i>Elvio Gilberto Amparore, Marco Beccuti, Susanna Donatelli, and Giuliana Franceschinis</i>	
Learning Probabilistic Automata for Model Checking	111
<i>Hua Mao, Yingke Chen, Manfred Jaeger, Thomas D. Nielsen, Kim G. Larsen, and Brian Nielsen</i>	
Model Checking MDPs with a Unique Compact Invariant Set of Distributions	121
<i>Rohit Chadha, Vijay Anand Korthikanti, Mahesh Viswanathan, Gul Agha, and Youngmin Kwon</i>	
Probabilistic Model Checking of Non-Markovian Models with Concurrent Generally Distributed Timers	131
<i>András Horváth, Marco Paolieri, Lorenzo Ridi, and Enrico Vicario</i>	
Session: Tools	
COSMOS: A Statistical Model Checker for the Hybrid Automata Stochastic Logic	143
<i>Paolo Ballarini, Hilal Djafri, Marie Dufлот, Serge Haddad, and Nihal Pekergin</i>	
A Tool: Quantitative Analyser for Programs	145
<i>Chunyan Mu and David Clark</i>	
GPA - A Tool for Fluid Scalability Analysis of Massively Parallel Systems	147
<i>Anton Stefanek, Richard A. Hayden, and Jeremy T. Bradley</i>	
SCOOP: A Tool for Symbolic Optimisations of Probabilistic Processes	149
<i>Mark Timmer</i>	
APAC: A Tool for Reasoning about Abstract Probabilistic Automata	151
<i>Benoît Delahaye, Kim G. Larsen, Axel Legay, Mikkel L. Pedersen, and Andrzej Wąsowski</i>	
Sirio: A Framework for Simulation and Symbolic State Space Analysis of non-Markovian Models	153
<i>Laura Carnevali, Lorenzo Ridi, and Enrico Vicario</i>	
SPORTSBET: A Tool for the Quantitative Evaluation and Execution of Betting Exchange Trading Strategies	155
<i>Polyvios Tsirimpas and William J. Knottenbelt</i>	
Session: Invited Talk	
Quantifying Information Flow Using Min-Entropy	159
<i>Geoffrey Smith</i>	

Session: Modeling and Security

Controlling Modelling Artifacts	171
<i>Michael J.A. Smith, Flemming Nielson, and Hanne Riis Nielson</i>	
Forecasting Run-Times of Secure Two-Party Computation	181
<i>Axel Schröepfer and Florian Kerschbaum</i>	
Model-based Security Metrics Using ADversary VIEw Security Evaluation (ADVISE)	191
<i>Elizabeth LeMay, Michael D. Ford, Ken Keefe, William H. Sanders, and Carol Muehrcke</i>	

Session: Model Comparison and Analysis

Partial Order Reduction for Model Checking Markov Decision Processes under Unconditional Fairness	203
<i>Henri Hansen, Marta Kwiatkowska, and Hongyang Qu</i>	
Composition and Equivalence of Markovian and Non-Markovian Models	213
<i>Peter Buchholz and Miklós Telek</i>	
Compositional Abstractions for Long-Run Properties of Stochastic Systems	223
<i>Michael J.A. Smith</i>	
The Multiple-Asymmetric-Utility System Model: A Framework for Modeling Cyber-Human Systems	233
<i>Douglas Eskins and William H. Sanders</i>	

Session: Distributed Systems

A Modeling Framework for Gossip-based Information Spread	245
<i>Rena Bakhshi, Daniela Gavidia, Wan Fokkink, and Maarten van Steen</i>	
Quantitative Evaluation of BFT Protocols	255
<i>Raluca Halalai, Thomas A. Henzinger, and Vasu Singh</i>	
Performance Comparison of Aggressive Push and Traditional Pull Strategies in Large Distributed Systems	265
<i>Benny Van Houdt</i>	

Author Index	275
---------------------------	-----