

**5th International ICST Conference
on Performance Evaluation
Methodologies and Tools
(VALUETOOLS 2011)**

**Paris, France
16-20 May 2011**

Editors:

**Samson Lasaulce
Pete Harrison**

**Dieter Fiems
Luc Vandendorpe**

ISBN: 978-1-63439-405-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by The Institute for Computer Sciences,
Social Informatics and Telecommunications Engineering (ICST)
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact European Alliance for Innovation (EAI)
at the address below.

European Alliance for Innovation (EAI)
c/o Volha Shaparava , Dr
Publications
Via alla Cascata 56/D - 38123 Povo,
Trento - Italy

publications@eai.eu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

A POSITIONING OF COOPERATIVE DIFFERENTIAL GAMES	1
<i>J. C. Engwerda, P. V. Reddy</i>	
LARGE-SCALE GAMES IN LARGE-SCALE SYSTEMS	9
<i>H. Tembine</i>	
HJB APPROACH FOR MOTION PLANNING AND REACHABILITY ANALYSIS	18
<i>Olivier Bokanowski, Anna Desilles, Hasnaa Zidani</i>	
A SELF-OPTIMIZATION METHOD FOR COVERAGE-CAPACITY OPTIMIZATION IN OFDMA NETWORKS WITH MIMO	27
<i>Richard Combes, Zwi Altman, Eitan Altman</i>	
STABILITY OF SPATIAL WIRELESS SYSTEMS WITH RANDOM ADMISSIBLE-SET SCHEDULING	37
<i>N. Bouman, S. C. Borst, J. S. H. Van Leeuwen</i>	
STABILITY AND ASYMPTOTIC OPTIMALITY OF OPPORTUNISTIC SCHEDULERS IN WIRELESS SYSTEMS	46
<i>U. Ayesta, M. Erasquin, M. Jonckheere, I. M. Verloop</i>	
OPTIMAL BASE STATION PLACEMENT: A STOCHASTIC METHOD USING INTERFERENCE GRADIENT IN DOWNLINK CASE	56
<i>Salman Malik, Alonso Silva, Jean-Marc Kelif</i>	
ANALYTIC PERFORMANCE EVALUATION OF OPPORTUNISTIC SPECTRUM ACCESS WITH DETECTION ERRORS	64
<i>Patrick Tortelier</i>	
CONTINUOUS POLLING WITH REROUTING AND APPLICATIONS TO FERRY ASSISTED WIRELESS LANS	71
<i>Veeraruna Kavitha</i>	
DERIVING GENERALISED STOCHASTIC PETRI NET PERFORMANCE MODELS FROM HIGH-PRECISION LOCATION TRACKING DATA	81
<i>Nikolas Anastasiou, Tzu-Ching Horng, William Knottenbelt</i>	
HIERARCHICALLY CONSTRUCTED PETRI-NETS AND PRODUCT-FORMS	91
<i>Peter G. Harrison, Catalina M. Llado</i>	
A SYMBOLIC APPROACH TO QUANTITATIVE ANALYSIS OF PREEMPTIVE REAL-TIME SYSTEMS WITH NON-MARKOVIAN TEMPORAL PARAMETERS	101
<i>Laura Carnevali, Johnny Giuntini, Enrico Vicario</i>	
EXPLOITING MULTIFORMALISM MODELS FOR TESTING AND PERFORMANCE EVALUATION IN SIMTHESYS	111
<i>E. Barbierato, M. Gribaudo, M. Iacono</i>	
MODELING NETWORK CODED TCP THROUGHPUT: A SIMPLE MODEL AND ITS VALIDATION	121
<i>Minji Kim, Muriel Médard, Joao Barros</i>	
LARGE-DEVIATIONS ANALYSIS FOR ENERGY-SAVING MECHANISMS IN WIRELESS NETWORKS	131
<i>Koen De Turck, Dieter Fiems, Stijn De Vuyst, Herwig Bruneel, Sabine Wittevrongel</i>	
NETWORK CODING SCHEMES FOR THE MULTIPLE-ACCESS RELAY CHANNEL	140
<i>Stefan Dierks, Onurcan Iscan, Christoph Hausl</i>	
JOINT NETWORK/CHANNEL CODING FOR HETEROGENEOUS MULTI-SOURCE/MULTI-RELAY COOPERATIVE NETWORKS	150
<i>Charly Poulliat, Marco Di Renzo</i>	
EXPLICIT SOLUTIONS FOR QUEUES WITH HYPO-EXPONENTIAL SERVICE TIME AND APPLICATIONS TO PRODUCT-FORM ANALYSIS	156
<i>Andrea Marin, Samuel Rota Bulò</i>	
EFFICIENT CALCULATION OF RARE EVENT PROBABILITIES IN MARKOVIAN QUEUEING NETWORKS	166
<i>Linar Mikeev, Werner Sandmann, Verena Wolf</i>	
BOUNDING TECHNIQUES FOR TRANSIENT ANALYSIS OF G-NETWORKS WITH CATASTROPHES	177
<i>Hind Castel-Taleb, Idriss Ismael-Aouled, Nihal Pekergin</i>	
ACCELERATION OF PERFECT SAMPLING BY SKIPPING EVENTS	187
<i>Furcy Pin, Ana Busic, Bruno Gaujal</i>	
DISTRIBUTED STOCHASTIC APPROXIMATION FOR CONSTRAINED AND UNCONSTRAINED OPTIMIZATION	197
<i>Pascal Bianchi, Jeremie Jakubowicz</i>	
A FRAMEWORK FOR OPTIMIZATION UNDER LIMITED INFORMATION	204
<i>Tansu Alpcan</i>	

MODEL FOR SHARING FEMTO ACCESS	214
<i>Mariem Krichen, Johanne Cohen, Dominique Barth</i>	
ON DISTRIBUTED POWER CONTROL AND TRANSCEIVER OPTIMIZATION IN WIRELESS NETWORKS	225
<i>S-awomir Stanczak, Michal Kaliszán, Mario Goldenbaum</i>	
SIMULATING FLOW LEVEL BANDWIDTH SHARING WITH PARETO DISTRIBUTED FILE SIZES	235
<i>Julio Rojas-Mora, Tania Jiménez, Eitan Altman</i>	
HS-MEASURE : A HYBRID CLUSTERING VALIDITY MEASURE TO INTERPRET ROAD TRAFFIC DATA	244
<i>Yosr Naïja, Kaouther Blibech</i>	
K-MEANS AND ADAPTIVE K-MEANS ALGORITHMS FOR CLUSTERING DNS TRAFFIC	251
<i>Qinghui Xu, Daniel Migault, Stéphane Sénécal, Stanislas Francfort</i>	
AUTOMATIC PROTOCOL SIGNATURE GENERATION FRAMEWORK FOR DEEP PACKET INSPECTION	261
<i>Géza Szabó, Zoltán Turányi, László Toka, Sándor Molnár, Alysson Santos</i>	
A SURVEY ON YOUTUBE STREAMING SERVICE	270
<i>Majed Haddad, Eitan Altman, Rachid El-Azouzi, Tania Jiménez, Salah Eddine Elayoubi, Sana Ben Jamaa</i>	
HASL: AN EXPRESSIVE LANGUAGE FOR STATISTICAL VERIFICATION OF STOCHASTIC MODELS	276
<i>Paolo Ballarini, Hilal Djafri, Marie Duflot, Serge Haddad, Nihal Pekergin</i>	
CENTRALITY MAPS AND THE ANALYSIS OF CITY STREET NETWORKS	286
<i>Thomas Courtat, Stéphane Douady, Catherine Gloaguen</i>	
SOCIALLY OPTIMAL PRICING OF CLOUD COMPUTING RESOURCES	292
<i>Ishai Menache, Asuman Ozdaglar, Nahum Shimkin</i>	
DYNAMIC POWER ALOCATION GAMES IN PARALLEL MULTIPLE ACCESS CHANNELS	302
<i>Panayotis Mertikopoulos, Elena V. Belmega, Aris L. Moustakas</i>	
UPLINK POWER CONTROL AND SUBCARRIER ASSIGNMENT FOR AN OFDMA MULTICELLULAR NETWORK BASED ON GAME THEORY*	312
<i>Giacomo Bacci, Alessandro Bulzomato, Marco Luise</i>	
ACCURATE AND EFFICIENT SIMULATION OF BANDWIDTH DYNAMICS FOR PEER-TO-PEER OVERLAY NETWORKS	322
<i>Alexandros Gkogkas, Roberto Roverso, Seif Haridi</i>	
THROUGHPUT AND QOS PRICING IN WIRELESS COMMUNICATION	332
<i>Andrey GarnaeV, Yezekael Hayel, Konstantin Avrachenkov, Eitan Altman</i>	
MORE ABOUT BASE STATION LOCATION GAMES	342
<i>Francois Meriaux, Samson Lasaulce, Michel Kieffer</i>	
WORST-CASE DELAY BOUNDS WITH FIXED PRIORITIES USING NETWORK CALCULUS	351
<i>Anne Bouillard, Aurore Junier</i>	
MODELING QUANTITATIVE REQUIREMENTS IN SLAS WITH NETWORK CALCULUS	361
<i>Sebastian Vastag</i>	
NETWORK CALCULUS: APPLICATION TO SWITCHED REAL-TIME NETWORKING	369
<i>Jean-Philippe Georges, Thierry Divoux, Eric Rondeau</i>	
A TEMPORAL NETWORK CALCULUS APPROACH TO SERVICE GUARANTEE ANALYSIS OF STOCHASTIC NETWORKS	378
<i>Jing Xie, Yuming Jiang</i>	
STABILITY BOUNDS FOR $MT=MT=N=N + R$ QUEUE	388
<i>Alexander Zeifman, Sergey Shorgin, Anna Korotysheva, Vladimir Bening</i>	
QBD SENSITIVITY ANALYSIS TOOL USING DISCRETE-EVENT SIMULATION AND EXTENSION OF SMCSOLVER	393
<i>M. Cordy, M. A. Remiche</i>	
A TAYLOR SERIES EXPANSIONS APPROACH TO QUEUES WITH TRAIN ARRIVALS	401
<i>Koen De Turck, Dieter Fiems, Sabine Wittevrongel, Herwig Bruneel</i>	
HAMILTONIAN TRANSITION MATRICES	410
<i>Konstantin Avrachenkov, Ali Eshragh, Jerzy A. Filar</i>	
REVENUE MAXIMIZATION IN SPECTRUM AUCTION FOR DYNAMIC SPECTRUM ACCESS	414
<i>Ali Kakhbod, Ashutosh Nayyar, Demosthenis Teneketzis</i>	
LEARNING TO USE THE SPECTRUM IN SELF-CONFIGURING HETEROGENOUS NETWORKS: A LOGIT EQUILIBRIUM APPROACH	421
<i>S. M. Perlaza, S. Lasaulce, H. Tembine, M. Debbah</i>	
Author Index	