

2019 International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOPT 2019)

**Avignon, France
3 – 7 June 2019**



**IEEE Catalog Number: CFP19357-POD
ISBN: 978-1-7281-3085-9**

**Copyright © 2019, International Federation for Information Processing (IFIP)
All Rights Reserved**

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19357-POD
ISBN (Print-On-Demand):	978-1-7281-3085-9
ISBN (Online):	978-3-903176-20-1

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) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Content

<i>On Minimizing the Maximum Age-of-Information For Wireless Erasure Channels</i> Arunabh Srivastava, Abhishek Sinha, Krishna Jagannathan	1
<i>Optimizing Networked Situational Awareness</i> Jean Rahal, Gustavo de Veciana, Takayuki Shimizu, Hongsheng Lu	7
<i>Optimal Radio Access Technology Selection in an SDN based LTE-WiFi Network</i> Arghyadip Roy, Prasanna Chaporkar, Abhay Karandikar, Pranav Jha	15
<i>Optimizing Network Slicing via Virtual Resource Pool Partitioning</i> Pablo Caballero, Gustavo de Veciana, Albert Banchs, Xavier Costa-Perez	23
<i>Toward Packet Routing with Fully-distributed Multi-agent Deep Reinforcement Learning</i> Xinyu You, Xuanjie Li, Yuedong Xu, Hui Feng, Jin Zhao	31
<i>Strictly Pareto Inefficient Nash Equilibria</i> Hisao Kameda	39
<i>Dynamic Frequency Reuse in Dense Cellular Networks</i> Bart Post, Sem Borst, Hans van den Berg	47
<i>A distributed implementation of opportunistic interference alignment for MIMO cognitive radio</i> Chao Zhang, Samson Lasaulce, Sara Berri	55
<i>Channel Reconstruction via Quadratic Programming in Massive MIMO Networks</i> Narayan Prasad, Xiao-Feng Qi, Qian Zhang	60
<i>Efficient Beamforming for Mobile mmWave Networks</i> Sara Khosravi, Hossein Shokri Ghadikolaei, Marina Petrova	68
<i>Integrating Sub-6 GHz and Millimeter Wave to Combat Blockage: Delay-Optimal Scheduling</i> Guidan Yao, Morteza Hashemi, Ness Shroff	76

<i>Optimization and Learning Algorithms for Stochastic and Adversarial Power Control</i> Harsh Gupta, Niao He, R. Srikant	84
<i>Beyond Max-weight Scheduling: A Reinforcement Learning-based Approach</i> Jeongmin Bae, Joohyun Lee, Song Chong	92
<i>Distributed Algorithms for Efficient Learning and Coordination in Ad Hoc Networks</i> Arun Verma, Manjesh Hanawal, Rahul Vaze	100
<i>Complexity of URLLC Scheduling and Efficient Approximation Schemes</i> Apostolos Destounis, Georgios Paschos	108
<i>Fundamental Limits in Cellular Networks with Point Process Partial Area Statistics</i> Lelio Chetot, Jean-Marie Gorce, Jean-Marc Kelif	116
<i>Broadcasting Real-Time Flows in Integrated Backhaul and Access 5G Networks</i> Aria HasanzadeZonuzi, I-Hong Hou, Srinivas Shakkottai	124
<i>On the impact of mobility in cellular networks</i> Elene Anton, Florian Simatos, Urtzi Ayesta	132
<i>Fractional Programming for Robust TX BF Design in Multi-User/Single-Carrier PD-NOMA</i> Hiroki Iimori, Giuseppe Thadeu Freitas de Abreu, Koji Ishibashi	140
<i>Robust Beam Tracking and Data Communication in Millimeter Wave Mobile Networks</i> Shahram Shahsavari, Mohammad Khojastepour, Elza Erkip	147
<i>Beam Alignment and User Scheduling in mmWave Networks under Mobility</i> Jihyun Lee, Eylem Ekici	155
<i>Multi-agent Deep Reinforcement Learning based Power Control for Large Energy Harvesting Networks</i> Mohit Sharma, Alessio Zappone, Mérouane Debbah, Mohamad Assaad	163
<i>Power Allocation in Dual Connectivity Networks Based on Actor-Critic Deep Reinforcement Learning</i> Elham Moein, Ramin Hasibi, Matin Shokri, Mehdi Rasti	170

<i>Distributed MAC over A General Multi-packet Reception Channel</i> Yanru Tang, Faeze Heydaryan, Jie Luo	178
<i>Throughput and Delay Analysis for Coded ARQ</i> Derya Malak, Ohad Elishco, Muriel Médard, Edmund Yeh	186
<i>Link Scheduling under Correlated Shadowing</i> Tigran Tonoyan, Magnús Halldórsson	194
<i>Content-based Wake-up Control for Wireless Sensor Networks Exploiting Wake-up Receivers</i> Junya Shiraiishi, Hiroyuki Yomo, Kaibin Huang, Čedomir Stefanović, Petar Popovski	202
<i>Sampling for Remote Estimation through Queues : Age of Information and Beyond</i> Tasmeen Zaman Ornee, Yin Sun	210
<i>Can We Achieve Fresh Information with Selfish Users in Mobile Crowd-Learning ?</i> Bin Li, Jia Liu	218
<i>Minimizing The Age of Information in a CSMA Environment</i> Ali Maatouk, Mohamad Assaad, Anthony Ephremides	226
<i>How to Price Fresh Data</i> Meng Zhang, Ahmed Arafa, Jianwei Huang, H. Vincent Poor	234
<i>On the Credibility of Information Flows in Real-time Wireless Networks</i> Daojing Guo, I-Hong Hou	242
<i>Elastic Multi-resource Network Slicing: Can Protection Lead to Improved Performance?</i> Jiaxiao Zheng, Gustavo de Veciana	250
<i>The Cooperation and Competition Between an Added Value MVNO and an MNO Allowing Secondary Access</i> Yining Zhu, Haoran Yu, Randall Berry	258
<i>Optimal Timing in Dynamic and Robust Attacker Engagement During Advanced Persistent Threats</i> Jeffrey Pawlick, Thi Thu Hang Nguyen, Edward Colbert, Quanyan Zhu	266

<i>Dynamic scheduling in a partially fluid, partially lossy queueing system</i> Kiran Chaudhary, Veeraruna Kavitha, Jayakrishnan Nair	274
<i>Scheduling Algorithms for 5G Networks with Mid-haul Capacity Constraints</i> Abhishek Sinha, Matthew Andrews, Prasanth Ananth	282
<i>The Order of Things: Position-Aware Network-friendly Recommendations in Long Viewing Sessions</i> Theodoros Giannakas, Thrasyvoulos Spyropoulos, Pavlos Sermpezis	290
<i>Online Detection of Stalling and Scrubbing in Adaptive Video Streaming</i> Lorenzo Maggi, Jeremie Leguay, Michael Seufert, Pedro Casas	298
<i>Cache-Version Selection and Content Placement for Adaptive Video Streaming in Wireless Edge Networks</i> Archana Sasikumar, Tao Zhao, I-Hong Hou, Srinivas Shakkottai	306
<i>Distributed Cooperative Caching for VoD with Geographic Constraints</i> Berkas Serbetci, Jasper Goseling, Konstantin Avrachenkov	314
<i>Computationally Efficient, Stable Scheduling for Wireless Systems with Limited Probing</i> Joseph Lubars, R. Srikant, Lei Ying	322
<i>Optimal Joint Offloading and Wireless Scheduling for Parallel Computing with Deadlines</i> Xudong Qin, Weijian Xu, Bin Li	330
<i>Scheduling users in drive-thru Internet: a multi-armed bandit approach</i> Nga Nguyen, Urtzi Ayesta, Balakrishna Prabhu	338
<i>Deep Reinforcement Learning Autoencoder with Noisy Feedback</i> Mathieu Goutay, Jakob Hoydis, Fayçal Ait Aoudia	346
<i>Machine Learning based Antenna Selection and Power Allocation in Multi-user MISO Systems</i> Thang Vu, Lei Lei, Björn Ottersten, Symeon Chatzinotas	352
<i>A Beam-Switching Scheme for Resilient mm-Wave Communications With Dynamic Link Blockages</i> Aniq Ur Rahman, Gourab Ghatak	358

<i>On Hybrid MoSK-CSK Modulation based Molecular Communication: Error Rate Performance Analysis using Stochastic Geometry</i> Nithin Sabu, Neeraj Varshney, Abhishek Gupta	364
<i>A Massive MIMO Stochastic Geometry Analysis of Various Beamforming Designs with Partial CSIT</i> Christo Kurisummoottil Thomas, Dirk Slock	371
<i>Epidemic Enhanced Cellular Networks</i> Veeraruna Kavitha, Eitan Altman, Sreenath Ramanath	379
<i>Multi-task Deep Learning based Environment and Mobility Detection for User Behavior Modeling</i> Marie Line Alberi Morel, Illyne Saffar, Kamal Singh, César Viho	387
<i>Location-Verification and Network Planning via Machine Learning Approaches</i> Alessandro Brighente, Francesco Formaggio, Marco Centenaro, Stefano Tomasin, Giorgio Maria Di Nunzio	394
<i>Enabling LTE RACH Collision Multiplicity Detection via Machine Learning</i> Davide Magrin, Chiara Pielli, Čedomir Stefanović, Michele Zorzi	401
<i>On Detection of Critical Events in a Finite Forest using Randomly Deployed Wireless Sensors</i> Kaushlendra Pandey, Abhishek Gupta	409
<i>Typical Voronoi cells for Cox point processes on Manhattan grids</i> Alexander Hinsén, Christian Hirsch, Benedikt Jahnel, Elie Cali	416