Wodes 2012 Technical Program

Tuesday 2nd

18:00 -20:00 Welcome Cocktail

Wednesday 3rd

8:00-9:00 Wodes registration
9:00-9:15 Welcome

Plenary session: Some Perspectives and Challenges in the (Discrete) Control of Cellular Systems, Prof. José Eduardo Ribeiro Cury

9:15-10:15

Fluid and Hybrid Petri Nets

10:45-12:45 Coffee Break

10:45-11:05 Marking homothetic monotonicity and fluidization of untimed Petri nets
Estibaliz Fraca, Jorge Julvez and Manuel Silva
Spain, Universidad de Zaragoza

11:05-11:25 Discontinuity Induced Bifurcations in Timed Continuous Petri Nets
Anna-Lena Meyer
Germany, University of Paderborn

11:25-11:45 Distinguishability in Continuous Timed Petri Nets
Enrique Aguayo-Lara, Antonio Ramirez and Javier Ruiz
Mexico, CINVESTAV

11:45-12:05 Structural and generic conditions for controllability of timed continuous Petri nets
C. Renato Vazquez and Antonio Ramirez-Treviño
Mexico, UNIVERSITY OF GUADALAJARA

12:05-12:25 Control of continuous Petri nets using ON/OFF based method
Liewei Wang, Cristian Mahulea, Jorge Júlvez and Manuel Silva
Spain, UNIVERSITY OF ZARAGOZA

12:25-12:45 Stationary behavior of controlled Generalised Batches Petri Nets
Isabel Demongodin and Alessandro Giua
LSIS - Aix-Marseille University, France

12:45-14:30 Lunch Break

14:30-16:20 SS - Discrete event/hybrid models and methods applied to transportation systems modelling and control

14:30-14:50 A Decision Support System for Risk Evaluation of HAZMAT Transportation in Motorways
Maria Pia Fanti, Giorgio Iacobellis and Walter Ukovich
Italy. Polytechnic of Bari

14:50-15:10 Multi-intersection Traffic Light Control Using Infinitesimal Perturbation Analysis
Yanfeng Geng and Christos Cassandras
United States, Boston University

Mustafa Seçkin Durmuş, Uğur Yıldırım and Mehmet Turan Söylemez
Turkey, Istanbul Technical University
15:30-16:00  
Coffee break

16:00-16:20  
**Time and Timed Petri Nets**

*Time Petri Networks with Memory-Enabled Tokens: An Application to the Modeling of Dynamic Hybrid Systems*

Yamen El Touati, Nejib Ben Hadj Alouane and Moez Yeddes  
Tunisia, OASIS

16:20-16:40  
**FIFO Time Petri Nets for conflicts handling**

Hanifa Boucheneb, Adrien Bullich and Olivier H. Roux  
Canada, École Polytechnique de Montréal

*A Constraint Programming Approach for Generating Firing Sequences in Timed Petri Nets With Token Identification*

Yonglian Huang, Thomas Bourdeaud'Huy, Armand Toguyeni and Pierre-Alain Yvars  
LAGIS, EC Lille, France

16:40-17:00  
**FIFO Time Petri Nets for conflicts handling**

Hanifa Boucheneb, Adrien Bullich and Olivier H. Roux  
Canada, École Polytechnique de Montréal

*A Constraint Programming Approach for Generating Firing Sequences in Timed Petri Nets With Token Identification*

Yonglian Huang, Thomas Bourdeaud'Huy, Armand Toguyeni and Pierre-Alain Yvars  
LAGIS, EC Lille, France

17:00-17:20  
**Maximal Permissive Timed Control for a Class of Hybrid Systems**

Sonia Batis and Hassane Alla  
France, Gipsa-lab, Grenoble

17:20-18:00

18:00-18:20

---

**Wednesday 3rd**

8:00-9:00  
Wodes registration

9:00-9:15  
Welcome

9:15-10:15  
**Plenary session: Some Perspectives and Challenges in the (Discrete) Control of Cellular Systems, Prof. José Eduardo Ribeiro Cur**

10:15-10:45  
Coffee Break

10:45-12:45  
**SS - Discrete event systems and Max-Plus algebra**

*Compositions of (max,+) automata*

Sébastien Lahaye, Jan Komenda and Jean-Louis Boimond  
France, LUNAM Université, LISA

*Using max-plus to solve the job shop problem with time lags*

José Cury, Jean Jacques Loiseau, Claude Martinez and Max Queiroz  
Brazil, DAS - Universidade Federal de Santa Catarina

*A non-linear set-membership approach for the control of Discrete Event Systems*

Mehdi Lhommeau, Luc Jaulin and Laurent Hardouin  
France, LISA - ISTIA - Université d'Angers

11:45-12:05  
**Model Predictive Control for Stochastic Switching Max-Plus-Linear Systems**

Stefan van Loenhout, Ton van Den Boom, Samira Farahani and Bart De Schutter  
Netherlands, Delft Center for Systems and Control, Delft University of Technology

*Stock Reduction for Timed Event Graphs Based on Output Feedback*

Xavier David-Henriet, Thomas Brunsch, Jörg Raisch and Laurent Hardouin  
Germany, TU Berlin

*On the solution of Max-plus linear equations with application on the control of Timed Event Graphs*

Vinicius Mariano Gonçalves, Carlos Andrey Maia and Laurent Hardouin  
Brazil, UFMG

12:45-14:30  
Lunch Break
14:30-16:20  **Max-Plus analysis**

New representations for (max,+) -automata with applications to the performance evaluation of discrete event systems

Rabah Boukra, Sébastien Lahaye and Jean-Louis Boimond
France, LISA

14:50-15:10  **Decentralized Control of Product (max+) -automata using Coinduction**

Jan Komenda, Sebastien Lahaye and Jean-Louis Boimond
Czech Republic, Institute of Mathematics, Academy of Sciences of the Czech Republic

15:10-15:30  **Abstraction-based Synthesis of Timed Supervisors for Time-Weighted Systems**

Rong Su
Singapore, Nanyang Technological University

16:00-16:20  **Supervisory control theory**

Coffee break

16:20-16:40  **Hierarchical Interface-Based Supervisory Control Based on the Conflict Preorder**

Robi Malik and Ryan Leduc
New Zealand, University of Waikato

Bisimilarity Enforcing Supervisory Control of Nondeterministic Systems under Event and State Observations

Katsuyuki Kimura, Masashi Nomura and Shigemasa Takai
Japan, Osaka University

17:00-17:20  **On the Computation of Supremal Sublanguages Relevant to Supervisory Control**

Thomas Moor, Christine Baier, Tae-Sic Yoo, Feng Lin and Stéphane Lafortune
Germany, Universität Erlangen-Nürnberg

Robustness of Synchronous Communication Protocols with Bounded Delay for Decentralized Discrete-Event control

Md Waselul Haque Sadid, Laurie Ricker and Shahin Hashtrudi-Zad
Canada, Concordia University

Thursday 4th

8:00-9:00  Wodes registration

9:00-10:00  **Plenary session: Optimal Control of Switched-Mode Dynamical Systems, Prof. Yorai Wardi**

10:00-10:30  **Coffee Break**

10:30-10:50  SS - Approaches for the analysis and control of Petri nets

On Intrinsically Live Structure of a Class of Generalized Petri Nets Modeling FMS

Ding Liu, Kamel Barkeroui and Mengchu Zhou
China, Xidian University

11:00-11:20  **Supervisory control of Petri nets using polyhedral regions**

Roberto Bacos, José Eduardo Ribeiro Cury, Redouane Kara and Jean Jacques Loiseau
France, LUNAM Université, IRCCyN UMR CNRS 6597

11:30-11:50  Recoverability Analysis of Controlled Discrete Event Systems Modelled by a Class of Petri Nets
Alberto Lutz-Ley and Ernesto Lopez-Mellado  
Mexico, CINVESTAV

11:50-12:10  
*Optimal Sensor Selection for Ensuring Diagnosability in Labeled Bounded Petri Nets*

Maria Paola Cabasino, Stéphane Lafortune and Carla Seatzu  
Italy, University of Cagliari

12:10-12:30  
*Decentralized K-Diagnosability of Petri Nets*

Francesco Basile, Pasquale Chiacchio and Gianmaria De Tommasi  
Italy, DIEII - Università di Salerno

12:30-12:50  
*On/Off control with observer’s state feedback for continuous timed Petri nets*

Enrique Aguayo-Lara, Roberto Ross-León, Antonio Ramirez and Javier Ruiz  
Mexico, CINVESTAV

12:50-14:30  
Lunch Break

14:30-16:20  
**Fault Tolerance and diagnosis**

14:30-14:50  
*Analysis of partially observed recursive tile systems*

Sébastien Chédor, Christophe Morvan, Sophie Pinchinat and Hervé Marchand  
France, ENS Cachan, IRISA

14:50-15:10  
*Bounded Sensor Failure Tolerant Supervisory Control*

Kurt Rohloff  
United States, Raytheon BBN Technologies

15:10-15:30  
*Active Identification of Petri Net Models*

Francesco Basile, Pasquale Chiacchio and Jolanda Coppola  
Italy, DIEII - Università di Salerno

15:30-16:00  
Coffee Break

16:00-17:00  
*50 years after the PhD thesis of Petri: A perspective*, Prof. M. Silva

18:00-19:00  
Guided Tour

20:30-22:30  
Dinner

---

**Thursday 4th**

8:00-9:00  
Wodes registration

9:00-10:00  
**Plenary session: Optimal Control of Switched-Mode Dynamical Systems**, Prof. Yoram Wardi

10:00-10:30  
Coffee Break

10:30-10:50  
**SS - Supervisory control of large discrete-event systems modeled by automata**

10:50-11:10  
*Computation of Supervisors for Recongurable Machine Tools*

Klaus Schmidt  
Turkey, Cankaya University

11:10-11:30  
*New Results on Supervisor Localization, with Application to Multi-Agent Formations*

Kai Cai and W.M. Wonham  
Canada, University of Toronto

**An Algorithm for Weak Synthesis Observation Equivalence for Compositional Supervisor Synthesis**

11:30-11:50
Sahar Mohajerani, Robi Malik and Martin Fabian
Sweden, Clamers University of Technology
11:50-12:10  On Algorithms and Extensions of Coordination Control of Discrete-Event Systems
Jan Komenda, Tomas Masopust and Jan H. van Schuppen
Czech Republic, Institute of Mathematics, Czech Academy of Sciences
12:10-12:30  Coarsest Controllability-Preserving Plant Minimization
Jasen Markovski
Netherlands, Eindhoven University of Technology
12:30-12:50  A Hierarchical Control Architecture for Sequential Behaviours
Christine Baier and Thomas Moor
Germany, Universität Erlangen-Nürnberg, Lehrstuhl für Regelungstechnik
12:50-14:30  Lunch Break
14:30-16:20  Planning, Resource Allocation and Scheduling
14:30-14:50  Maximally Permissive Deadlock Avoidance for Resource Allocation Systems with R/W-Locks
Ahmed Nazeem and Spyros Reveliotis
United States, ISyE, Georgia Tech
14:50-15:10  LTL Planning in Dynamic Environments
Marius Kloetzer and Cristian Mahulea
Romania, Universitatea Tehnica Gheorghe Asachi din Iasi
15:10-15:30  Turbo Planning
Loig Jezequel and Eric Fabre
France, ENS Cachan Bretagne
15:30-16:00  Coffee Break
16:00-17:00  50 years after the PhD thesis of Petri: A perspective, Prof. M. Silva
18:00-19:00  Guided Tour
20:30-22:30  Dinner

Friday 5th

8:00-9:00  Wodes registration

Plenary session: Discussion on the fault diagnosis methods of Discrete Event Systems,
Prof. Janan Zaytoon
9:00-10:00
10:00-10:30  Coffee Break
10:30-10:50  Synthesis and control
10:50-11:10  Algebraic synthesis of logical controllers despite inconsistencies in specifications
Jean-Marc Roussel and Jean-Jacques Lesage
France, LURPA, ENS Cachan
Incremental Discrete Controller Synthesis for communicating systems based on modular
decomposition
Mingming Ren, Emil Dumitrescu, Laurent Pietrac and Eric Niel
France, Laboratoire AMPERE, INSA de Lyon
11:10-11:30
11:30-11:50  Real-Time Control with Parametric Timed Reachability Games
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:50-12:10</td>
<td>Enforcing Opacity of Regular Predicates on Modal Transition Systems</td>
</tr>
<tr>
<td></td>
<td>Philippe Darondeau</td>
</tr>
<tr>
<td></td>
<td>France, INRIA</td>
</tr>
<tr>
<td>12:10-12:30</td>
<td>Generalized Verification of the Observer Property in Discrete Event Systems</td>
</tr>
<tr>
<td></td>
<td>Hugo Jerzy Bravo, Antonio Eduardo Carrilho Da Cunha, P.N. Pena, Robi Malik and J.E.R. Cury</td>
</tr>
<tr>
<td></td>
<td>Brazil, Instituto Militar de Engenhari</td>
</tr>
<tr>
<td>12:30-12:50</td>
<td>Accuracy vs. Complexity: the stochastic bound approach</td>
</tr>
<tr>
<td></td>
<td>Jean-Michel Fourneau, Farah Ait Salaht, Hind Castel, Nihal Pekergin and Johanne Cohen</td>
</tr>
<tr>
<td></td>
<td>France, Universite de Versailles St Quentin</td>
</tr>
<tr>
<td>12:50-13:10</td>
<td>Closing session</td>
</tr>
<tr>
<td>13:10-15:00</td>
<td>Lunch End</td>
</tr>
</tbody>
</table>

**Friday 5th**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-9:00</td>
<td>Wodes registration</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td>Plenary session: Discussion on the fault diagnosis methods of Discrete Event Systems, Prof. Janan Zaytoon</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:30-10:50</td>
<td>Tools / Applications</td>
</tr>
<tr>
<td>10:50-11:10</td>
<td>DESLAB: A scientific computing program for analysis and synthesis of Discrete-event Systems</td>
</tr>
<tr>
<td></td>
<td>Leonardo B. Clavijo, Joao Carlos Basilio and Lilian Kawakami Carvalho</td>
</tr>
<tr>
<td></td>
<td>Brazil, Universidade Federal do Rio de Janeiro</td>
</tr>
<tr>
<td>11:10-11:30</td>
<td>A model of distributed key generation for industrial control systems</td>
</tr>
<tr>
<td></td>
<td>Gorkem Kilinc, Igor Nai Fovino, Carlo Ferigato and Ahmet Koltuksuz</td>
</tr>
<tr>
<td></td>
<td>Turkey, Izmir Institute of Technology, Department of Computer Engineering</td>
</tr>
<tr>
<td>11:30-11:50</td>
<td>Explicit Storage and Analysis of Billions of States using Commodity Computers</td>
</tr>
<tr>
<td></td>
<td>Yin Wang, Jason Stanley and Stephane Lafortune</td>
</tr>
<tr>
<td></td>
<td>United States HP Labs</td>
</tr>
<tr>
<td>11:50-12:10</td>
<td>Approximate Event-Based Optimization for Evacuation</td>
</tr>
<tr>
<td></td>
<td>Qing-Shan Jia and Li Xia</td>
</tr>
<tr>
<td></td>
<td>China, Tsinghua University</td>
</tr>
<tr>
<td>12:10-12:30</td>
<td>Range and Value-Set Analysis for Programmable Logic Controllers</td>
</tr>
<tr>
<td></td>
<td>Sebastian Biallas, Stefan Kowalewski and Bastian Schlich</td>
</tr>
<tr>
<td></td>
<td>Germany, RWTH Aachen University</td>
</tr>
<tr>
<td>12:30-12:50</td>
<td>Application of Supervisory Control Theory to Guide Cellular Dynamics</td>
</tr>
<tr>
<td></td>
<td>Fabio L. Baldissera and José E.R. Cury</td>
</tr>
<tr>
<td></td>
<td>Brazil, UFSC</td>
</tr>
<tr>
<td>12:50-13:10</td>
<td>Closing session</td>
</tr>
<tr>
<td>13:10-15:00</td>
<td>Lunch End</td>
</tr>
</tbody>
</table>