CPSWeek 2014

April 14 - 17, 2014
Berlin, Germany

Program
Organizers

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Conferences:

HSCC - Program Chairs
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John Lygeros, ETH Zurich, Switzerland

ICCPS - General Chairs
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Radu Stoleru, Texas A&M University, USA
ICCPS - Program Chairs
Alexandre Bayen, University of California Berkeley, USA
Michael Branicky, University of Kansas, USA

IPSN - General Chair
Adam Wolisz, TU Berlin, Germany
IPSN - Program Chairs
Jie Liu, Microsoft Research, USA
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HiCoNS - General Chairs
Linda Bushnell, University of Washington, USA
Larry Rohrbough, University of California, Berkeley, USA
HiCoNS - Program Chairs
Saurabh Amin, Massachusetts Institute of Technology, USA
Xenofon Koutsoukos, Vanderbilt University, USA

RTAS - General Chair
Eduardo Tovar, Polytechnic Institute of Porto, Portugal
RTAS - Program Chair
Richard West, Boston University, USA
Floor Plan
First floor (EG)

Second floor
Industrial Exhibition
Tuesday - Thursday

You will find a small exhibition by industrial companies, associations and research projects in the Foyer of the first floor (Foyer EG).

Exhibitors: OFFIS e.V., Germany; Esterel Technologies GmbH; GE Global Research, United Technologies Research Centre Ireland, Limited; Centro di Competenza ICT-SUD Serl (Tuesday before lunch only); ARTEMIS Industrial Association (Wednesday only)

WiFi

To get WiFi access, please scan for available network and connect to: andels_Hotel_Berlin

Open your web browser and enter the following log-in data:

Log-in: CPSWeek2014
Password: Berlin
Program - Sunday, April 13th
Microsoft/IPSN Localization Competition, Preparation Day

09:00-17:00  Registration
09:00-17:00  Microsoft/IPSN Localization Competition Preparation
Room: Saphir 2 and 3, Foyer EG

Program - Monday, April 14
Workshops (W) and Tutorials (T)

08:00-18:00  Registration
08:00-09:00  Welcome coffee, Foyer EG
09:00-17:00  Microsoft/IPSN Localization Competition
Room: Saphir 2 and 3, Foyer EG
09:00-11:00  W1, W2, W3, W4, W5, W6, W7, W8, W10, T4
11:00-11:30  Coffee break, Foyer EG
09:00-11:00  W1, W2, W3, W4, W5, W6, W7, W8, W10, T4
13:00-14:00  Lunch, Restaurant Delight
14:00-16:00  W1, W2, W3, W4, W5, W6, W7, W9, W10, T2, T3
16:00-16:30  Coffee break, Foyer EG
16:30-18:00  W1, W2, W3, W4, W5, W6, W7, W9, W10, T2, T3
Program - Monday, April 14
Workshops (W) and Tutorials (T)

Overview workshops

W1: Modeling and Simulation of Cyber-Physical Energy Systems (MSCPES)
Room: Smaragd
W2: CPS 20 years from now – how to get there: vision and challenges (CYPHERS)
Room: Granat
Room: Opal 2
Room: Jade 2
W5: 5. Medical Cyber-Physical Systems Workshop (MedicalCPS)
Room: Amethyst
Room: Diamant
W7: 5th International Workshop on Networks of Cooperating Objects for Smart Cities 2014 (UBICITEC 2014)
Room: Quarz
W8: First International Workshop on Design Space Exploration of Cyber-Physical Systems (IDEAL)
Room: Topas 1 (co-located with W10)
W9: International Workshop on Robotic Sensor Networks
Room: Bernstein
Room: Topas 1 (co-located with W8)

Overview tutorials

Room: Opal 1
Room: Jade 1
T4: On the Design of CPS using Arbitrated Network Control Systems
Room: Jade 1
Program - Tuesday, April 15

Morning

07:30-08:30  Welcome coffee, Foyer EG
08:30-10:00  Plenary - Session Chair: John Lygeros, Room: Rubin
08:30       Welcome
08:45       A Cyber-Enabled Grid of the Future
            Ian A. Hiskens
09:50       Best Paper Award HSCC
10:00       Coffee break, Foyer EG

HiCoNS: Monitoring and Estimating - Session Chair: Michael Lemmon, Room: Amethyst

10:30       Resilient Multidimensional Sensor Fusion Using Measurement History
            Radoslav Ivanov, Miroslav Pajic, Insup Lee
11:00       Fundamental Limits of Nonintrusive Load Monitoring
            Roy Dong, Lillian Ratliff, Henrik Ohlsson, S. Shankar Sastry
11:30       Resilient Distributed Parameter Estimation in Heterogeneous Time-Varying Networks
            Heath LeBlanc, Firas Hassan

HSCC: Piecewise affine and switched linear systems - Session Chair: Pavithra Prabhakar, Room: Onyx

10:30       Computation of Piecewise Affine Terminal Cost Functions for Model Predictive Control
            Florian D. Brunner, Mircea Lazar, Frank Allgöwer
11:00       Stabilizing Discrete-Time Switched Linear Systems
            Atreyee Kundu, Debasish Chatterjee
11:30       An LQ Sub-Optimal Stabilizing Feedback Law for Switched Linear Systems
            Pierre Riedinger, Jean-Claude Vivalda
12:00       State-Feedback Stabilization of Discrete-Time Piecewise Affine Systems
            Sihan Xiong, Ji-Woong Lee

ICCPS: Energy and vehicles CPS, Session Chair: Sayan Mitra, Room: Saphir 1

10:30       Reconfiguration-Assisted Charging in Large-Scale Lithium-ion Battery Systems
            Liang He, Linghe Kong, Siyu Lin, Shaodong Ying, Yu Gu, Tian He and Cong Liu
11:00       Low-Power Architecture for High Frequency Sensor Acquisition in Many-DOF UAVs
            Renato Mancuso, Or Dantsker, Marco Caccamo and Michael Selig. A
11:30       Real-Time Battery Thermal Management for Electric Vehicles
            Eugene Kim, Jinkyu Lee and Kang G. Shin
12:00       Synthesis and Verification of Motor- Transmission Shift Controller for Electric Vehicles
            Hongxu Chen and Sayan Mitra
Program - Tuesday, April 15
Morning

IPSN: All Things Sensors - Session Chair: Akos Ledeczi, Room: Rubin

10:30  
A System for Fine-Grained Remote Monitoring, Control and Pre-Paid Electrical Service in Rural Microgrids  
Maxim Buevich, Dan Schnitzer, Anthony Rowe, Tristan Escalada, Arthur Jacquiau-Chamski

11:00  
Aquatic Debris Monitoring Using Smartphone-Based Robotic Sensors  
Yu Wang, Guoliang Xing, Jianxun Wang, Xiabo Tan, Xiaoming Liu, Rui Tan, Xiangmao Chang

11:30  
Airplanes Aloft as a Sensor Network for Wind Forecasting  
Ashish Kapoor, Eric Horvitz, Zachary Horvitz, Spencer Laube

12:00  
Using Humans as Sensors: An Estimation-theoretic Perspective  
Dong Wang, Md Tanvir Amin, Shen Li, Tarek Abdelzaher, Chenji Pan, Lance Kaplan, Siyu Gu, Hengchang Liu, Charu C. Aggarwal, Raghu Ganti, Xinlei Wang, Prasant Mohapatra, Boleslaw Szymanski, Hieu Le

RTAS: Software Architectures and Systems - Session Chair: Frank Mueller, Room: Saphir 2 and 3

10:30  
The Multi-Resource Server for Predictable Execution on Multi-core Platforms  
Rafia Inam, Nesredin Mahmud, Moris Behnam, Thomas Nolte, Mikael Sjödin

11:00  
Towards Certifiable Adaptive Reservations for Hypervisor-based Virtualization  
Stefan Groesbrink, Luis Almeida, Mario de Sousa and Stefan M. Petters

11:30  
FJOS: Practical, Predictable, and Efficient System Support for Fork/Join Parallelism  
Qi Wang, Gabriel Parmer

12:00  
Safer Sloth: Efficient, Hardware-Tailored Memory Protection  
Daniel Danner, Rainer Müller, Wolfgang Schröder-Preikschat, Wanja Hofer, Daniel Lohmann

12:30-13:30  
Women Event  
Open to all female participants of CPSWeek  
Interactive session with talks and discussions on challenges faced by women, specifically in academia.  
Guest Speaker: Prof. Marija D. Ilic: Things never quite turn out the way you plan it…maybe better?  
Room: Quartz  
(Lunch will be provided.)

12:30  
Lunch, Restaurant Delight
Program - Tuesday, April 15
Afternoon Session I

**HiCoNS: Invited Talk** - Session Chair: Xenofon Koutsoukos, Room: Amethyst

13:30 **A Passivity Framework for Modeling and Mitigating Attacks on Networked Control Systems**
Radha Poovendran

14:30 **Q & A**

**HSCC: Stochastic Hybrid Systems** - Session Chair: Benoît Caillaud, Room: Onyx

13:30 **Bisimilar Symbolic Models for Stochastic Control Systems Without State-Space Discretization**
Majid Zamani, Ilya Tkachev, Alessandro Abate

14:00 **Stochastic Reachability Based Motion Planning for Multiple Moving Obstacle Avoidance**
Nick Malone, Kendra Lesser, Meeko Oishi, Lydia Tapia

14:30 **Timely Monitoring of Partially Observable Stochastic Systems**
A. Prasad Sistla, Miloš Žefran, Yao Feng, Yue Ben

**ICCPS: Works-in-Progress** - Session Chair: Mohammad Al Faruque, Room: Saphir 1

13:30 **Five minutes per presenter**

**IPSN: Sensors Can Tell** - Session Chair: Wen Hu, Room: Rubin

13:30 **One Meter to Find Them All - Water Network Leak Localization Using a Single Flow Meter**
Iyswarya Narayanan, Anand Sivasubramaniam, Arunchandar Vasan, Venkatesh Sarangan

14:00 **Non-invasive Respiration Rate Monitoring Using a Single COTS TX-RX Pair**
Ossi Kaltiokallio, Huseyin Yigitler, Riku Jäntti, Neal Patwari

14:30 **Identifying Drug (Cocaine) Intake Events from Acute Physiological Response in the Presence of Free-living Physical Activity**
Syed Monowar Hossain, Amin Ahsan Ali, Md. Mahbubur Rahman, Santosh Kumar, Emre Ertin, David Epstein, Ashley Kennedy, Kenzie Preston, Annie Umbricht, Yixin Chen

**RTAS: Scheduling I** - Session Chair: Harini Ramaprasad, Room: Saphir 2 and 3

13:30 **Schedulability Tests for Tasks with Variable Rate-Dependent Behaviour under Fixed Priority Scheduling**
Robert I. Davis, Timo Feld, Victor Pollex, Frank Slomka

14:00 **Real-Time Scheduling under Fault Bursts with Multiple Recovery Strategy**
Mohammad A. Haque, Hakan Aydin, Dakai Zhu

14:30 **Hiding Memory Latency Using Fixed Priority Scheduling**
Saud Wasly, Rodolfo Pellizzoni

15:00 **Coffee break**, Foyer EG
**Program - Tuesday, April 15**  
**Afternoon Session II**

**HiCoNS: Application Security** - Session Chair: Heath LeBlanc, Room: Amethyst

15:30  
**Understanding the Security of Interoperable Medical Devices using Attack Graphs**  
Curtis Taylor, Krishna K. Venkatasubramanian, Craig Shue

16:00  
**Resilient Distributed Consensus for Tree Topology**  
Mark Yampolskiy, Yevgeniy Vorobeychik, Xenofon Koutsoukos, Peter Horvath, Janos Sztipanovits, Heath LeBlanc

16:30  
**A Module for Anomaly Detection in ICS Networks**  
Matti Mantere, Mirko Sailio, Sami Noponen

**HSCC: Hybrid system modeling** - Session Chair: Jens Oehlerking, Room: Onyx

15:30  
**A Type-based Analysis of Causality Loops in Hybrid Systems Modelers**  
Albert Benveniste, Timothy Bourke, Benoît Caillaud, Bruno Pagano, Marc Pouzet

16:00  
**A Hyperdense Semantic Domain for Hybrid Dynamic Systems to Model Different Classes of Discontinuities**  
Pieter J. Mosterman, Gabor Simko, Justyna Zander, Zhi Han

16:30  
**Quasi-Dependent Variables in Hybrid Automata**  
Sergiy Bogomolov, Christian Herrera, Marco Muñiz, Bernd Westphal, Andreas Podelski

17:00  
18:30  
**Panel Session: The role of robustness in hybrid systems**  
Moderated by Martin Fränzle, Carl von Ossietzky Universität  
Panelists: Antoine Girard, Pieter Mosterman, Maria Prandini, Stefan Ratschan, Thomas Stauner

**ICCPS: Keynote** - Session Chair: Michael Branicky, Room: Saphir 1

15:30  
**Keynote: Cooperative cyber-physical systems with human in the loop**  
Ruzena Bajcsy

**IPSN: Poster/Demo/Ph.D. Forum Madness** - Room: Rubin

15:30  
**60 seconds per presenter**

**RTAS: Mixed Criticality Systems** - Session Chair: Sathish Gopalakrishnan, Room: Saphir 2 and 3

15:30  
**Relaxing the Synchronous Approach for Mixed-Criticality Systems**  
Eugene Yip, Matthew Kuo, Partha Roop, David Broman

16:00  
**FlexPRET: A Processor Platform for Mixed-Criticality Systems**  
Michael Zimmer, David Broman, Chris Shaver, Edward A. Lee

16:30  
**Partitioned Scheduling of Multi-Modal Mixed-Criticality Real-Time Systems on Multiprocessor Platforms**  
Dionisio de Niz and Linh Thi Xuan Phan
Program - Tuesday, April 15
Poster & Demo Exhibition

10:00-17:00 Set-up of Poster and Demo Exhibitions, Rooms: Foyer OG, Opal, Jade
If you are presenting a poster or demo, please contact registration during this time.
You will be assigned a place where you can hang your poster / setup your demo.
Set-up must be completed by 17:00.

17:00 CPSWeek 2014 Poster & Demonstration Exhibition, Foyer OG, Room: Opal, Jade

20:00 Closing

Program - Tuesday, April 15
Industrial Presentations

Within this session, major industrial sponsors of CPSWeek provide insights into their current and future tool developments for CPS design and the services they provide to academia and pertinent industry.
Room: Quarz

17:00 Safety critical software design in the context of full system simulation
Christian Schrader, Esterel

17:30 Modeling Physical Systems for Control Design
Steve Miller, The Mathworks
**Program - Wednesday, April 16**

**Morning**

08:00-08:30  *Welcome coffee, Foyer EG*

08:30-10:00  *Plenary - Session Chair: Werner Damm, Room: Rubin*

08:30  *Towards a Theory of Resilient Cyber Physical Systems*

  **S. Shankar Sastry**

09:50  *Best Paper Award IPSN*

10:00  *Coffee break, Foyer EG*

**HiCoNS: Verification - Session Chair: Sayan Mitra, Room: Amethyst**

10:30  *A Formal Verification Approach To Revealing Sealth Attacks on Networked Control Systems*

  Nikola Trcka, Alberto Speranzon, Shaunak Bopardikar, Mark Moulin

11:00  *Graph-Based Verification and Misbehavior Detection in Multi-Agent Networks*

  Phillip Lee, Linda Bushnell, Radha Poovendran, Omar Saleh, Basel Alomair

11:30  *Safety Envelope for Security*

  Ashish Tiwari, Bruno Dutertre, Dejan Jovanovic, Patrick Lincoln, John Rushby, Dorsa Sadigh, Sanjit Seshia

**HSCC: Stability and Control - Session Chair: Mircea Lazar, Room: Onyx**

10:30  *Stability Analysis of Large-Scale Networked Control Systems with Local Networks: A Hybrid Small-Gain Approach*

  Dominicus P. Borgers, W.P. Maurice H. Heemels

11:00  *Model Reduction of Switched Affine Systems: A Method Based on Balanced Truncation and Randomized Optimization*

  Alessandro Vittorio Papadopoulos, Maria Prandini

11:30  *Control to Facet for Polynomial Systems*

  Christoffer Sloth, Rafael Wisniewski

12:00  *Simulation-guided Lyapunov Analysis for Hybrid Dynamical Systems*

  James Kapinski, Jyotirmoy V. Deshmukh, Sriram Sankaranarayanan, Nikos Aréchiga

**ICCPS: Transportation CPS - Session Chair: George Pappas, Room: Saphir 1**

10:30  *Intersection Protocols for Autonomous Vehicles*

  Reza Azimi, Gaurav Bhatia and Ragunathan Rajkumar. STIP: Spatio-Temporal

11:00  *Supervisor Synthesis in Model-Based Automotive Systems Engineering*

  Joanna van de Mortel-Fronczak, Martin H.R. van der Heijden, RudolfG.M. Huisman and Michel Reniers

11:30  *Freeway Traffic Control from Linear Temporal Logic Specifications*

  Samuel Coogan and Murat Arcak

12:00  *Real-Time Privacy-Preserving Model-Based Estimation of Traffic Flows*

  Jerome Le Ny, Ahmed Touati and George Pappas

12:30  *Lunch, Restaurant Delight*
**Program - Wednesday, April 16**

**Morning**

**IPSN: Testbeds** - Session Chair: Pei Zhang, Room: Rubin

10:30  *Bringing up OpenSky: A Large-scale ADS-B Sensor Network for Research*
Matthias Schäfer, Matthias Wilhelm, Martin Strohmeier, Ivan Martinovic, Vincent Lenders

11:00  *TempLab: A Testbed Infrastructure to Study the Impact of Temperature on Wireless Sensor Networks*
Carlo Alberto Boano, Kay Roemer, Marco Zuniga, James Brown, Utz Roedig, Chamath Keppitiyagama

11:30  *RESONATE: Reverberation Environment Simulation for Improved Classification of Speech Models*
Robert F. Dickerson, Enamul Hoque, Philip Asare, Shahriar Nirjon, John A. Stankovic

12:00  *CSense: A Stream-Processing Toolkit for Robust and High-rate Mobile Sensing Applications*
Farley Lai, Syed Shabih Hasan, Austin Laugesen, Octav Chipara

**RTAS: Memory and Cache Management** - Session Chair: Gabriel Parmer, Room: Saphir 2 and 3

10:30  *Precise Shared Cache Analysis using Optimal Interference Placement*
Kartik Nagar, Y. N. Srikant

11:00  *Selfish-LRU: Preemption-Aware Caching for Predictability and Performance*
Jan Reineke, Sebastian Altmeyer, Daniel Grund, Sebastian Hahn, Claire Maiza

11:30  *Bounding Memory Interference Delay in COTS-based Multi-Core Systems*
Hyoseung Kim, Dionisio de Niz, Björn Andersson, Mark Klein, Onur Mutlu, Raj Rajkumar

12:00  *PALLOC: DRAM Bank-Aware Memory Allocator for Performance Isolation on Multicore Platforms*
Heechul Yun, Renato Mancuso, Zheng-Pei Wu, Rodolfo Pellizzoni
Program - Wednesday, April 16
Afternoon Session I

**HiCoNS**: Networked and Distributed Control Systems - Session Chair: Peter Horvath, Room: Amethyst

13:30 **Distributed Switching Control to Achieve Resilience to Deep Fades in Leader-Follower Nonholonomic Systems**
Bin Hu, Michael Lemmon

14:00 **On the Cost of Differential Privacy in Distributed Control Systems**
Zhenqi Huang, Yu Wang, Sayan Mitra, Geir Dullerud

14:30 **Energy-Based Attack Detection in Networked Control Systems**
Emeka Eyisi, Xenofon Koutsoukos

**HSCC**: Keynote Address - Session Chair: John Lygeros, Room: Onyx

13:30 **Cells Driven by Computers: Long-term Model Predictive Control of Gene Expression in Yeast**
Gregory Batt

Tool & Case Study Session - Chaired by Austin Jones, Boston University

14:00 **Component Based Design of Hybrid Systems: A Case Study on Concurrency and Coupling**
Eike Möhlmann, Astrid Rakow, Werner Damm

14:30 **JSR: A Toolbox to Compute the Joint Spectral Radius**
Guillaume Vankeerberghen, Julien M. Hendrickx, Raphaël M. Jungers

15:10 **A Bounded Model Checking Tool for Periodic Sample-hold Systems**
Gabor Simko, Ethan K. Jackson

**ICCPS**: Best Paper Award Finalists session - Session Chairs: Alex Bayen and Michael Branicky, Room: Saphir 1

13:30 **DepSys: Dependency Aware Integration of Cyber-Physical Systems for Smart Homes**
Sirajum Munir and John A. Stankovic

14:00 **Opportunistic Scheduling of Control Tasks Over Shared Wireless Channels**
Konstantinos Gatsis, Miroslav Pajic, Alejandro Ribeiro and George Pappas

14:30 **Robustness of Attack-resilient State Estimators**
Miroslav Pajic, James Weimer, Nicola Bezzo, Paulo Tabuada, Oleg Sokolsky, Insup Lee and George J. Pappas

15:00 **Human-Inspired Multi-Contact Locomotion with AMBER2**
Huihua Zhao, Wenlong Ma, Michael Zeagler and Aaron Ames

15:30 Coffee break, Foyer EG
Program - Wednesday, April 16
Afternoon Session I

IPSN: Location, Location, Location - Session Chair: Anthony Rowe, Room: Rubin

13:30  Lightweight Map Matching for Indoor Localisation Using Conditional Random Fields
       Zhuoling Xiao, Hongkai Wen, Andrew Markham, Niki Trigoni

14:00  PiLoc: A Self-Calibrating Participatory Indoor Localization System
       Chengwen Luo, Hande Hong, Mun Choon Chan

14:30  Energy Efficient GPS Acquisition with Sparse-GPS
       Prasant Misra, Wen Hu, Yuzhe Jin, Jie Liu, Amanda Souza de Paula, Niklas Wirstrom,
              Thiemo Voigt

15:00  Optimal Sensor Placement and Measurement of Wind for Water Quality Studies in Urban Reservoirs
       Wan Du, Zikun Xing, Mo Li, Bingsheng He, Chua Hock Chye Lloyd, Haiyan Miao

RTAS: Industrial Session, Room: Saphir 2 and 3

13:30-15:30  Automotive Ethernet real-time predictability
            Jan Seyler (Daimler AG)

            Deeply Embedded Real-Time Hypervisors for the Automotive Domain
            Gary Morgan (ETAS Ltd.)

            Guaranteed Services on the Network-on-Chip of a Manycore Processor
            Benoît Dupont de Dinechin (Kalray)

            Challenges of multicore processors in mixed-criticality systems with focus on temporal aspects
            Michael Paulitsch (EADS)

            Challenges in WCET prediction
            Florian Martin (AbsInt)

            Panel Discussion
            Moderated by Frank Mueller, NCSU
Program - Wednesday, April 16
Afternoon Session II

**HiCoNS:** Invited Talk - Session Chair: Saurabh Amin, Room: Amethyst

16:00  From CRCs to Resilient Control Systems: The Slow Change from Reliability to Security
       Alvaro Cardenas

17:00  Q & A

**HSCC:** Reachability - Session Chair: Goran Frehse, Room: Onyx

16:00  Inner Approximated Reachability Analysis
       Eric Goubault, Michel Kieffer, Olivier Mullier, Sylvie Putot

16:30  Sampling-Based Approximation of the Viability Kernel for High-Dimensional Linear
       Sampled-Data Systems
       Jeremy H. Gillula, Shahab Kaynama, Claire J. Tomlin

17:00  Proofs from Simulations and Modular Annotations
       Zhenqi Huang, Sayan Mitra

**ICCPS:** Keynote - Session Chair: Alex Bayen, Room: Saphir 1

16:00  Keynote: Let’s Get Physical: Adding Physical Dimensions to Cyber Systems
       Alberto Sangiovanni Vincentelli

**IPSN:** Poster/Demo/Ph.D. Forum Madness, Room: Rubin

16:00  Indoor Localisation Competition Panel - Chair: Dimitrios Lymberopoulos

17:15  IPSN Business Meeting - Chair: Feng Zhao

**RTAS:** Timing Analysis - Session Chair: Albert Cheng, Room: Saphir 2 and 3

16:00  Trickle: Automated Infeasible Path Detection Using All Minimal Unsatisfiable Subsets
       Bernard Blackham, Mark Liffiton, Gernot Heiser

16:30  WCET-Aware Dynamic Code Management on Scratchpads for Software-Managed Multicores
       Yooseong Kim, David Broman, Jian Cai, Aviral Shrivastava

17:00  Architecture-Parametric Timing Analysis
       Jan Reineke, Johannes Doerfert

18:00  CPSWeek Dinner
Dinner Information

The CPSWeek Conference Dinner will take place on

April, 16th, 2014 at the Classic Remise, Berlin.

Address: Classic-Remise Berlin, Wiebestraße 36 - 37, 10553 Berlin

Attention: The entrance to the building is at Sickingstraße 60.

Website: http://www.remise.de/Classic-Remise-Berlin.php

How to go there:

Take the bus in front of the andel's Hotel. Buses are leaving from 6 p.m.

The way home:

The first bus is leaving at the restaurant back to andel's Hotel at 22:00. The last bus is leaving at 22:30.

Please have your dinner ticket with you (you will need it as bus ticket and as entrance ticket at the Classic Remise). Thank you very much!

Schedule:

18:00 Busses leaving in front of andel’s Hotel
18:30 Arrival and visit of the classic car center
19:30 Dinner speech of Dr. Werner Steinhögl, European Commission
19:45 Dinner starts
22:00/22:30 End, busses are leaving in front of the restaurant back to andel’s Hotel
Program - Thursday, April 17
Morning

08:00-08:30 Welcome coffee, Foyer EG
08:30-10:00 Plenary - Session Chair: Raj Rajkumar, Room: Rubin
08:30 The challenges for mechanisms and applications of cyber-physical Systems
P. R. Kumar
09:40 Best Paper Award ICCPS
09:50 Best Paper Award RTAS
10:00 Coffee break, Foyer EG

HiCoNS: Invited Session: On Improving CPS Resilience by Integrating Robust Control and Theory of Incentives - Session Chair: Larry Rohrbough, Room: Amethyst
10:30 Multilateral Trades in Interconnected Power Networks: A Local Public Goods Approach
Erik Michling, Demosthenis Teneketzis
11:00 On the Assessment and Mitigation of Vulnerabilities in Urban Water Distribution Networks
Lina Perelman (Technion-Israel Institute of Technology), Saurabh Amin
11:30 The Intricacies of Cyber-Insurance for Large Scale Networks with Interdependent Security
Galina A. Schwartz, S. Shankar Sastry
12:00 Conference end

HSCC: Approximation and robustness - Session Chair: Jörg Raisch, Room: Onyx
10:30 On Approximation Metrics for Linear Temporal Model-Checking of Stochastic Systems
Ilya Tkachev, Alessandro Abate
11:00 Resilience to Intermittent Assumption Violations in Reactive Synthesis
Rüdiger Ehlers, Ufuk Topcu
11:30 Model Measuring for Hybrid Systems
Thomas Henzinger, Jan Otop
12:00 Abstracting and Refining Robustness for Cyber-Physical Systems
Matthias Rungger, Paulo Tabuada

ICCPS: Energy and networks CPS - Session Chair: Miroslav Pajic, Room: Saphir 1
10:30 Intersection Protocols for Autonomous Vehicles
Hoang Hai Nguyen, Rui Tan and David K. Y. Yau
11:00 A Formal Model of the Impact of Stealthy Attacks on Optimal Power Flow in Power Grids
Mohammad Rahman, Ehab Al-Shaer and Rajesh Kavasseri
11:30 Model-IQ: Uncertainty Propagation from Sensing to Modeling and Control in Buildings
Madhur Behl, Truong Nghiem and Rahul Mangharam
12:00 Real-TimePrivacy-Preserving Model-Based Estimation of Traffic Flows
Anitha Murugesan, Oleg Sokolsky, Sanjai Rayadurgam, Michael Whalen, Mats Heimdahl and Insup Lee
12:30 Lunch, Restaurant Delight
Program - Thursday, April 17
Morning

IPSN: Networks - Session Chair: Luca Mottola, Room: Rubin

10:30 Lightweight Neighborhood Cardinality Estimations in Dynamic Wireless Sensor Networks
Marco Cattani, Marco Zuniga, Andreas Loukas, Koen Langendoen

11:00 Fast and Fine-grained Counting and Identification via Constructive Interference in WSNs
Dingming Wu, Chao Dong, Shaojie Tang, Haipeng Dai, Guihai Chen

11:30 P3: A Practical Packet Pipeline Using Synchronous Transmissions for Wireless Sensor Networks
Manjunath Doddavenkatappa, Mun Choon Chan

12:00 Cyclic Network Automata and Cohomological Waves
Yiqing Cai, Robert Ghrist

RTAS: H/W-S/W Interaction - Session Chair: Rodolfo Pellizzoni, Room: Saphir 2 and 3

10:30 Slack-Aware Opportunistic Monitoring for Real-Time Systems
Daniel Lo, Mohamed Ismail, Tao Chen, G. Edward Suh

11:00 A Network Virtualization Approach for Performance Isolation in Controller Area Network (CAN)
Christian Herber, Andre Richter, Thomas Wild, Andreas Herkersdorf

11:30 AHRB: A High-Performance Time-Composable AMBA AHB Bus
Javier Jalle, Jaume Abella, Eduardo Quiñones, Luca Fossati, Marco Zulianello, Francisco J. Cazorla

12:00 MAESTRO: A Time-Driven Embedded Testbed Architecture with Event-Driven Synchronization
Sriram Karunagaran, Karuna P. Sahoo, Jayaraj Poroor, Masahiro Fujita
Program - Thursday, April 17
Afternoon Session I

HiCoNS: Business Meeting, Room: Amethyst

13:30 Business Meeting

HSCC: Applications of hybrid systems - Chaired by Pieter J. Mosterman, Room: Onyx

13:30 Parameter Synthesis for Polynomial Biological Models
Tommaso Dreossi, Thao Dang

14:00 Compositionality Results for Cardiac Cell Dynamics
Md. Ariful Islam, Abhishek Murthy, Antoine Girard, Scott A. Smolka, Radu Grosu

14:30 Powertrain Control Verification Benchmark
Xiaoqing Jin, James Kapinski, Jyotirmoy V. Deshmukh, Koichi Ueda, Ken Butts

15:00 Dynamic Multi-Domain Bipedal Walking with ATRIAS through SLIP based Human-Inspired Control
Ayonga Hereid, Shishir Kolathaya, Mikhail S. Jons, Johnathan Van Why, Jonathan W. Hurst, Aaron D. Ames

ICCPS: CPS foundations/theory - Session Chair: Michael Branicky, Room: Saphir 1

13:30 Style-based Abstractions for Human Motion Classification
Amy Laviers and Magnus Egerstedt

14:00 Sacrificing a Little Space Can Significantly Improve Monitoring of Time-sensitive Cyber-physical Systems
Konstantinos Gatsis, Miroslav Pajic, Alejandro Ribeiro and George Pappas

14:30 CPS Security Panel
Moderator: Dr. Patricia Muoio
Panelists: Dr. David Corman, Dr. Daniel Massey, Neil Mitchison, Prof. George J. Pappas, Matt Scholl

15:30 Coffee break, Foyer EG
Program - Thursday, April 17
Afternoon Session I

**IPSN:** Let There Be Light - Session Chair: Andrew Markham, Room: Rubin

13:30  **SIPS:** Solar Irradiance Prediction System
Stefan Achleitner, Tao Liu, Ankur Kamthe, Alberto E. Cerpa

14:00  **Face Recognition on Smartphones via Optimised Sparse Representation Classification**
Yiran Shen, Bo Wei, Wen Hu, Mingrui Yang, Simon Luce, Chun Tung Chou

14:30  **Visual Light Landmarks for Mobile Devices**
Niranjini Rajagopal, Patrick Lazik, Anthony Rowe

15:00  **Sensors with Lasers: Building a WSN Power Grid**
Naveed Anwar Bhatti, Affan A. Syed, Muhammad Hamad Alizai

15:30  **Closing Session**

**RTAS:** Scheduling II - Session Chair: Oleg Sokolsky, Room: Saphir 2 and 3

13:30  **Overhead-Aware Temporal Partitioning on Multicore Processors**
Risat Mahmud Pathan, Per Stenström, Lars-Göran Green, Torbjörn Hult, Patrik Sandin

14:00  **Scaling Global Scheduling with Message Passing**
Felipe Cerqueira, Manohar Vanga, Björn B. Brandenburg

14:30  **Has Energy Surpassed Timeliness?**
Marcus Völp, Marcus Hähnel, Adam Lackorzynski
Program - Thursday, April 17
Afternoon Session II

**HSCC:** Timed systems and temporal specifications - Session Chair: Martin Fränzle, Room: Onyx

16:00 Temporal Logic Inference for Classification and Prediction from Data
Zhaodan Kong, Austin Jones, Ana Medina Ayala, Ebru Aydin Gol, Calin Belta

16:30 Energy and Mean-Payoff Timed Games
Romain Brenguier, Franck Cassez, Jean-François Raskin

17:00 Abstraction, Discretization, and Robustness in Temporal Logic Control of Dynamical Systems
Jun Liu, Necmiye Ozay

17:30 Edit Distance for Timed Automata
Krishnendu Chatterjee, Rasmus Ibsen-Jensen, Rupak Majumdar

**ICCPS:** Keynote - Session Chair: Alex Bayen, Room: Saphir 1

16:00 Keynote: Beyond the Internet of Things: Building a Programmable World
Henry Tirri

17:30 Closing Remarks

**RTAS:** Embedded Systems and Applications, Room: Saphir 2 and 3

16:00 Unifying DVFS and Offlining in Mobile Multicores
Aaron Carroll and Gernot Heiser

16:30 STCoS: Software-defined Traffic Control for Smartphones
Yoshikazu Watanabe, Shuichi Karino, Yoshinori Saida, Gen Morita and Takahiro Iihoshi

17:00 The ROSACE Case Study: From Simulink Specification to Multi/Many-Core Execution
Claire Pagetti, David Saussié, Romain Gratia, Eric Noulard and Pierre Siron