

ARCH16: 3RD INTERNATIONAL WORKSHOP ON APPLIED VERIFICATION FOR CONTINUOUS AND HYBRID SYSTEMS

CPSWeek, Vienna, Monday, April 11th, 2016

PROGRAM

09:00-10:30 Session 1: Invited Talk and Benchmarks I

- 09:00 [Dirk Beyer](#)
Reliable and Reproducible Competition Results
- 09:45 [Houssam Abbas](#), [Kuk Jin Jang](#) and [Rahul Mangharam](#)
Benchmark: Nonlinear Hybrid Automata Model of Excitable Cardiac Tissue
- 10:05 [Sidharta Andalam](#), [Avinash Malik](#), [Partha Roop](#) and [Mark Trew](#)
Benchmark: Hybrid automata model of the heart for formal verification of pacemakers

11:00-12:30 Session 2: Benchmarks II

- [Scott Livingston](#) and [Vasumathi Raman](#)
- 11:00 Chains of Integrators as a Benchmark for Scalability of Hybrid Control Synthesis [Benchmark Proposal]
- 11:20 [Andrew Sogokon](#), [Taylor T Johnson](#) and [Khalil Ghorbal](#)
Benchmarks for Non-linear Continuous System Safety Verification
- [Omar Beg](#), [Ali Davoudi](#) and [Taylor T Johnson](#)
- 11:40 Benchmark: Formal Verification of Charge Pump Phase-Locked Loop and Full Wave Rectifier Through Reachability Analysis
- 12:00 [Simone Schuler](#), [Fabiano Daher Adegas](#) and [Adolfo Anta](#)
Benchmark proposal: hybrid modelling of a wind turbine

14:00-15:30 Session 3: Benchmarks III and Tools I

- 14:00 [Sergiy Bogomolov](#), [Christian Herrera](#) and [Wilfried Steiner](#)
Benchmark for Verification of Fault-Tolerant Clock Synchronization Algorithms
- 14:20 [Hoang-Dung Tran](#), [Luan Viet Nguyen](#) and [Taylor T Johnson](#)
Benchmark: Large-Scale Linear Systems from Order-Reduction
- 14:40 [Stanley Bak](#), [Sergiy Bogomolov](#) and [Christian Schilling](#)
High-level Hybrid Systems Analysis with Hypy
- 15:00 [Ibtissem Ben Makhlouf](#), [Norman Hansen](#) and [Stefan Kowalewski](#)
HyReach: A Reachability Tool for Linear Hybrid Systems Based on Support Functions

16:00-18:00 Session 4: Tools II

- [Axel Busboom](#), [Simone Schuler](#) and [Alexander Walsch](#)
- 16:00 Tool presentation: formalSpec - semi-automatic formalization of system requirements for formal verification
- [Dalibor Drzajic](#), [Nikolaos Kariotoglou](#), [Maryam Kamgarpour](#) and [John Lygeros](#)
- 16:20 A Semidefinite Programming Approach to Control Synthesis for Stochastic Reach-Avoid Problems
- 16:40 [Heinz Riener](#), [Robert Koenighofer](#), [Goerschwin Fey](#) and [Roderick Bloem](#)
SMT-Based CPS Parameter Synthesis and Repair
- 17:00 [Matthias Althoff](#) and [Dmitry Grebenyuk](#)
Implementation of Interval Arithmetic in CORA 2016