

## CALL FOR PAPERS

### 7th International Conference on Machines, Computations and Universality (MCU'15)

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9-11 September 2015, Salamis Bay Conti Resort Hotel, Famagusta, North Cyprus



The International conference MCU series traces its roots back to the mid 90's, and has always been concerned with gaining a deeper understanding of computation and universality through the study of models of general purpose computation. The MCU conference series was initiated in Paris in 1995. Following editions were held in Metz in 1998, in Chisinau in 2001, in St. Petersburg in 2004, in Orleans in 2007, and in Zurich in 2013.

#### SCOPE

MCU explores computation in the setting of various discrete models (Turing machines, register machines, cellular automata, tile assembly systems, rewriting systems, molecular computing models, neural models etc.) and analog and hybrid models (BSS machines, infinite time cellular automata, real machines, quantum computing etc.). There is particular, but not exclusive, emphasis given towards the following:

- ❖ The search for frontiers between decidability and undecidability in the various models
- ❖ The search for the simplest universal models
- ❖ The computational complexity of predicting the evolution of computations in the various models
- ❖ The connection between parallelism and decidability, complexity and universality
- ❖ Universality and undecidability in continuous models of computation

#### TOPICS ADDRESSED

MCU'2015 conference topics include, but not exclusively:

Analog computation	Automata theory
Cellular automata	Classical computability and degree structures
Computability theoretic aspects of programs	Computable analysis and real computation
Computable structures and models	Continuous computing
Decidability of theories	DNA computing, self-assembly and tiling
Dynamical systems and computational models	Emerging and non-standard models of computation
Finite model theory	Generalized recursion theory
Higher type computability	Infinite time Turing machines
Membrane computation	Molecular computation
Morphogenesis and developmental biology	Multi-agent systems
Natural computation and Hybrid systems	Neural nets and connectionist models
Physics and computability	Proof theory and computability
Randomness and Kolmogorov complexity	Relativistic computation
Swarm intelligence and self-organisation	Theory of Petri nets
Turing, Counter, Register, Signal machines	Universality of systems

## SUBMISSIONS

Authors of accepted papers are expected to present their work at the conference. Submitted papers must describe work not previously published, and they must neither be accepted nor under review at a journal or at another conference with refereed proceedings. Authors are required to submit their manuscripts electronically in PDF using the [LNCS style](#) since the MCU'15 proceedings will be published as [Springer Verlag LNCS volume](#). Authors using LaTeX can download the needed macros at Springer Verlag site. Papers should not exceed 15 pages; full proofs may appear in a clearly marked technical appendix which will be read at the reviewers' discretion. The submission process is managed by EasyChair <https://easychair.org/conferences/?conf=mcu2015>. The proceedings will be available at the conference venue. There will be a best paper and a best student paper award.

## INVITED SPEAKERS

[Matthew Cook](#), University of Zürich and ETH Zürich, Switzerland  
Linqiang Pan, Huazhong University of Science and Technology, China  
[Mike Stannett](#), University of Sheffield, UK

[Jetty Kleijn](#), Leiden University, The Netherlands  
[Anne Siegel](#), IRISA/CNRS, Dyliss, France

## PROGRAM COMMITTEE

Andrew Adamatzky, University of the West of England, UK  
Laurent Bienvenu, CNRS, Université Paris Diderot  
Jérôme Durand-Lose, University of Orléans, France (co-chair)  
Rudolf Freund, University of Vienna, Austria  
Jarkko Kari, University of Turku, Finland  
Peter Leupold, University of Leipzig, Germany  
Kenichi Morita, Hiroshima University, Japan  
Turlough Neary, University of Zürich and ETH Zürich  
Matthew Patitz, University of Arkansas, USA  
Igor Potapov, University of Liverpool, UK  
Klaus Sutner, University Carnegie-Mellon, USA  
Sergey Verlan, University of Paris Est, France

Rza Bashirov, Eastern Mediterranean University, Famagusta  
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Martin Kutrib, Universität Gießen, Germany  
Maurice Margenstern, University of Lorraine, France  
Benedek Nagy, Eastern Mediterranean University, Famagusta and  
University of Debrecen, Hungary (co-chair)  
Gheorghe Paun, Romanian Academy, Bucharest, Romania  
K. G. Subramanian, University of Science, Malaysia  
György Vaszil, University of Debrecen, Hungary

## CONTACT TO

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## IMPORTANT DATES

Deadline for paper submission: 15 March 2015  
Notification of paper acceptance: 25 May 2015  
Final version of the paper: 20 June 2015