CALL FOR PAPERS

11th International Workshop on Numerical Software Verification
July 18-19, 2018
Federated Logic Conference (FLoC) 2018
Oxford, UK

Web Page: https://nsv-2018.github.io/nsv2018/

Important Dates
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Submissions deadline: April 15, 2018
Notification: May 15, 2018
Final version: June 15, 2018
Workshop: July 18-19, 2018

Description of the Workshop
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Numerical computations are ubiquitous in digital systems: supervision,
prediction, simulation and signal processing rely heavily on numerical
calculus to achieve desired goals. Design and verification of
numerical algorithms has a unique set of challenges, which set it
apart from rest of software verification. To achieve the verification
and validation of global properties, numerical techniques need to
precisely represent local behaviors of each component. The
implementation of numerical techniques on modern hardware adds another
layer of approximation because of the use of finite representations of
infinite precision numbers that usually lack basic arithmetic
properties such as commutativity and associativity. Finally, the
development and analysis of cyber-physical systems (CPS) which involve
the interacting continuous and discrete components pose a further
challenge. It is hence imperative to develop logical and mathematical
techniques for the reasoning about programmability and reliability.
The NSV workshop is dedicated to the development of such techniques.

Topics
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The scope of the workshop includes, but is not restricted to, the
following topics:

- Quantitative and qualitative analysis of hybrid systems
- Models and abstraction techniques
- Optimal control of dynamical systems
- Parameter identification for hybrid systems
- Numerical optimization methods
- Hybrid systems verification
- Applications of hybrid systems to systems biology
- Propagation of uncertainties, deterministic and probabilistic models
- Specifications of correctness for numerical programs
- Formal specification and verification of numerical programs
- Quality of finite precision implementations
- Numerical properties of control software
- Validation for space, avionics, automotive and real-time applications
- Validation for scientific computing programs

Submission information
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We solicit regular and short papers.Paper submission must be performed
via the EasyChair system:
[http://easychair.org/conferences/?conf=nsv2018]

Regular papers must describe original work, be written and presented
in English, and must not substantially overlap with papers that have
been published or that are simultaneously submitted to a journal or a
conference with refereed proceedings. Submitted papers will be judged
on the basis of significance, relevance, correctness, originality, and
clarity. They should clearly identify what has been accomplished and
why it is significant.

Regular paper submissions should not exceed 15 pages in ENTCS style,
including bibliography and well-marked appendices:

http://www.entcs.org/prelim.html

Program committee members are not required to read the appendices, and
thus papers must be intelligible without them.

Short papers are also welcome, they should present tools, benchmarks,
case-studies or be extended abstracts of ongoing research. Short
papers should not exceed 6 pages. Furthermore, in order to foster the
exchange of ideas, we encourage authors to also submit short papers
describing ideas which have already been reported in other venues.

All accepted papers (except short papers based on ideas published
elsewhere) will be published electronically by Elsevier in the
Electronic Notes in Theoretical Computer Science series (ENTCS).

Chairs
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Alexandre Chapoutot (ENSTA ParisTech)
Nasrine Damouche (Université de Perpignan, France)
Alessandro Pinto (United Technologies Research Center)

Program Committee
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