

SECOND CALL FOR PAPERS  
NFM 2012  
Fourth NASA Formal Methods Symposium

Norfolk, Virginia, USA  
April 3 - 5, 2012

<http://shemesh.larc.nasa.gov/nfm2012/>  
[nasa-nfm2012@mail.nasa.gov](mailto:nasa-nfm2012@mail.nasa.gov)

### **Important Dates**

**Submission: 11 December 2011**  
Notification: 21 January 2012  
Final Version: 4 February 2012  
Conference: 3 - 5 April 2012

### **Theme of Conference**

The NASA Formal Methods Symposium is a forum for theoreticians and practitioners from academia, industry, and government, with the goals of identifying challenges and providing solutions to achieving assurance in mission- and safety-critical systems. Within NASA, for example, such systems include autonomous robots, separation assurance algorithms for aircraft, Next Generation Air Transportation (NextGen), and autonomous rendezvous and docking for spacecraft. Moreover, emerging paradigms such as code generation and safety cases are bringing with them new challenges and opportunities. The focus of the symposium will be on formal techniques, their theory, current capabilities, and limitations, as well as their application to aerospace, robotics, and other safety-critical systems.

### **Topics of Interest**

- Formal verification, including theorem proving, model checking, and static analysis
- Automated test generation and testing techniques for safety-critical systems
- Model-based development
- Techniques and algorithms for scaling formal methods, such as abstraction and symbolic methods, compositional techniques, as well as parallel and distributed techniques
- Monitoring and runtime verification
- Code generation from formally verified models
- Significant applications of formal methods to aerospace systems
- Modeling and verification aspects of cyber-physical systems
- Safety cases
- Accident/safety analysis
- Formal approaches to fault tolerance
- Theoretical advances and empirical evaluations of formal methods
- Techniques for safety-critical systems, including hybrid and embedded systems
- Formal methods in systems engineering

### **Invited Speakers **\*\*NEW\*\*****

- Andrew Appel, Princeton University
- Patrick Cousot, École normale supérieure, Paris and New York University
- Cesare Tinelli, University of Iowa

## Submissions

There are two categories of submissions:

- Regular papers describing fully developed work and complete results (15 pages/30 minute talks)
- Short papers describing tools, experience reports, or descriptions of work in progress or preliminary results (6 pages/15 minute talks)

All papers should be in English and describe original work that has not been published or submitted elsewhere. All submissions will be fully reviewed by members of the program committee and the Symposium proceedings (including regular papers and short papers) will appear as a volume in Lecture Notes in Computer Science. Papers must use the LNCS style and be put in PDF format.

Papers should be submitted through the following link: <http://www.easychair.org/conferences/?conf=nfm2012>

## Program Chairs

Alwyn Goodloe, NASA Langley Research Center  
Suzette Person, NASA Langley Research Center

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Corina Pasareanu, NASA Ames Research Center  
James Rash, NASA Goddard  
Kristin Y. Rozier, NASA Ames Research Center

### **Location and Cost**

The symposium will take place at the Norfolk Waterside Marriott in Norfolk, Virginia, USA. April 3-5, 2012.

There will not be a registration fee charged to participants. All interested individuals, including non-US citizens, are welcome to attend, to listen to the talks, and to participate in discussions; however, all attendees must register.