4th International Workshop on Equation-Based Object-Oriented Modeling Languages and Tools
ETH Zürich, September 5, 2011

EOOLT 2011

Call for Papers

Scope

During the past decade, integrated model-based design of complex cyber-physical systems (which mix physical dynamics with software and networks) has gained significant attention. Hybrid modeling languages based on equations, supporting both continuous-time and event-based aspects (e.g. Modelica, SysML, VHDL-AMS, and Simulink/ Simscape) enable high-level reuse and integrated modeling capabilities of both the physically surrounding system and software for embedded systems. The EOOLT workshop addresses the current state of the art of such equation-based object-oriented (EOO) modeling languages, as well as open issues that currently still limit their expressiveness, correctness, and usefulness. Moreover, integration of and comparison with related approaches and languages, such as actor-oriented, synchronous, and domain specific languages, are of particular interest. The workshop is concerned with, but not limited to, the following EOO related themes:

- Acausality and its role in model reusability.
- Component systems for EOO languages.
- Discrete-event and hybrid modeling.
- Embedded systems and efficient code generation.
- Modeling language constructs in support of simulation, optimization, diagnostics, and system identification.
- EOO mathematical modeling vs. UML software modeling.
- Integrated hardware / software modeling of cyber-physical systems.
- Requirement to model traceability, translation, and integration.
- Formal semantics of EOO related languages.
- Multi-resolution / multi-scale modeling using EOO languages.
- Model-driven development related to EOO languages.
- Numerical coupling of EOO simulators and other simulation tools.
- Parallel execution of EOO models.
- Programming / modeling environments.
- Real-time simulation using EOO languages.
- Reflection and meta-programming.
- Verification, type systems, and early static checking.
- Relation to functional reactive programming (FRP) and synchronous languages.
- Comparison with related causal or hybrid formalisms.

Submission

Researchers and practitioners are invited to submit full-length papers (up to 10 pages) for consideration by the program committee. Papers are welcome that offer presentations and discussions of existing languages and tools, their capabilities and limitations; reports on practical experience; demonstrations of languages, tools, ideas, and concepts; positions related to relevant questions; and discussion topics.

Important Dates

- Submission deadline: **May 20**
- Author notification: **June 20**
- Camera-ready: **August 15**
- Workshop: **September 5**

Publication

If a paper has been accepted, the authors should present the paper at the workshop and also have the paper published in electronic proceedings (and a local conference paper version) at Linköping University Electronic Press.

Organizing Committee

- **François E. Cellier** (Chair), ETH Zürich
- **David Broman** (Co-Chair), Linköping University
- **Peter Fritzson** (Co-Chair), Linköping University
- **Edward A. Lee** (Co-Chair), U.C. Berkeley

Program Committee (Preliminary)

Bernhard Bachmann - University of Applied Sciences, Bielefeld, Germany
Bert van Beek - Eindhoven University of Technology, Netherlands
Christoph Clauß – Fraunhofer, Dresden, Germany
Jan Broenink - University of Twente, Netherlands
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Olaf Enge-Rosenblatt - Fraunhofer, Dresden, Germany
Peter Fritzson - Linköping University, Sweden
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Jakob Mauss - QTronic GmbH, Berlin, Germany
Sven-Erik Mattsson - Dassault Systèmes, Lund, Sweden
Pieter Mosterman - MathWorks, Inc., Natick, MA, USA
Henrik Nilsson - University of Nottingham, United Kingdom
Dionisio de Niz Villasenor - Carnegie Mellon University, USA
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Chris Paredis - Georgia Institute of Technology, Atlanta, USA
Peter Pepper - TU Berlin, Berlin, Germany
Adrian Pop - Linköping University, Linköping, Sweden
Nicolas Rouquette - NASA Jet Propulsion Laboratory, USA
Carl-Johan Sjöstedt - KTH, Stockholm, Sweden
Christian Sonntag - TU Dortmund, Dortmund, Germany
Alfonso Urquía - UNED, Madrid, Spain
Hans Vangheluwe - McGill University, Canada / University of Antwerp, Belgium
Dirk Zimmer - DLR Oberpfaffenhofen, Germany
Johan Åkesson - Lund University, Sweden

See the workshop website for more information
http://www.eoolt.org/2011/