

# Table of Contents

## Invited Papers

Software Testing Research and Practice .....	1
<i>Antonia Bertolino</i>	
Abstract State Processes .....	22
<i>Tommaso Bolognesi and Egon Börger</i>	
Recent Advances in Refinement .....	33
<i>John Derrick and Eerke Boiten</i>	
Partial Updates Exploration II .....	57
<i>Yuri Gurevich and Nikolai Tillmann</i>	
Experiments with Test Case Generation and Runtime Analysis .....	87
<i>Cyrille Artho, Doron Drusinsky, Allen Goldberg, Klaus Havelund, Mike Lowry, Corina Pasareanu, Grigore Roşu, and Willem Visser</i>	
A Framework for Proving Contract-Equipped Classes .....	108
<i>Bertrand Meyer</i>	
Mobile UNITY Schemas for Agent Coordination .....	126
<i>Gruia-Catalin Roman and Jamie Payton</i>	
UML and Concurrency .....	151
<i>Perdita Stevens</i>	

## Research Papers

A Unified Formal Specification and Analysis of the New Java Memory Models .....	166
<i>Varsha Awhad and Charles Wallace</i>	
Modelling Conditional Knowledge Discovery and Belief Revision by Abstract State Machines .....	186
<i>Christoph Beierle and Gabriele Kern-Isberner</i>	
Formal Description of a Distributed Location Service for Mobile Ad Hoc Networks .....	204
<i>András Benczúr, Uwe Glässer, and Tamás Lukovszki</i>	
Remarks on Turbo ASMs for Functional Equations and Recursion Schemes .....	218
<i>Egon Börger and Tommaso Bolognesi</i>	

Integrating UML Static and Dynamic Views and Formalizing  
the Interaction Mechanism of UML State Machines ..... 229  
*Alessandra Cavarra, Elvinia Riccobene, and Patrizia Scandurra*

The Hidden Computation Steps of Turbo Abstract State Machines ..... 244  
*Nicu G. Fruja and Robert F. Stärk*

Using Spin to Generate Tests from ASM Specifications ..... 263  
*Angelo Gargantini, Elvinia Riccobene, and Salvatore Rinzivillo*

Interfacing ASM with the MDG Tool ..... 278  
*Amjad Gawanmeh, Sofiène Tahar, and Kirsten Winter*

ASMs versus Natural Semantics: A Comparison with New Insights ..... 293  
*Sabine Glesner*

Quantum Computing and Abstract State Machines ..... 309  
*Erich Grädel and Antje Nowack*

Consistent Integration for Sequential Abstract State Machines ..... 324  
*Marianna Nicolosi Asmundo and Elvinia Riccobene*

Deciding the Verification Problem for Abstract State Machines ..... 341  
*Antje Nowack*

An ASM Semantics of UML Derived from the Meta-model  
and Incorporating Actions ..... 356  
*Ileana Ober*

Privacy, Abstract Encryption and Protocols:  
An ASM Model – Part I ..... 372  
*Dean Rosenzweig, Davor Runje, and Neva Slani*

A Framework for Modeling the Semantics  
of Expression Evaluation with Abstract State Machines ..... 391  
*Wolf Zimmermann and Axel Dold*

**Extended Abstracts**

Using AsmL for Runtime Verification ..... 407  
*Mike Barnett, Wolfram Schulte, and Nikolai Tillmann*

Modeling Information Services on the Basis of ASM Semantics ..... 408  
*Aleksander Binemann-Zdanowicz and Bernhard Thalheim*

Designing the Parlay Call-Control Using ASMs ..... 411  
*Paolo Falcarin and Alessandra Cavarra*

Test Case Generation from AsmL Specifications ..... 413  
*Wolfgang Grieskamp, Lev Nachmanson,  
Nikolai Tillmann, and Margus Veanes*

Teaching ASMs, Teaching with ASMs: Opportunities in Undergraduate Education .....	414
<i>James Huggins, Jean Mayo, and Charles Wallace</i>	
Using ASM Specifications for Compiler Testing .....	415
<i>Alexey Kalinov, Alexandre Kossatchev, Alexander Petrenko, Mikhail Posypkin, and Vladimir Shishkov</i>	
ASMs as Integration Platform towards Verification and Validation of Distributed Production Control Systems at Multiple Levels of Abstraction .....	416
<i>Martin Kardos and Ulrich Nickel</i>	
AsmL Specification of a Ptolemy II Scheduler .....	417
<i>Daniel Lázaro Cuadrado, Peter Koch, and Anders P. Ravn</i>	
ASM Specification of Database Systems .....	418
<i>Andreas Prinz and Bernhard Thalheim</i>	
The Computable Kernel of ASM .....	421
<i>Wolfgang Reisig</i>	
A Non-standard Approach to Operational Semantics for Timed Systems .....	423
<i>Heinrich Rust</i>	
Parallelism versus Nondeterminism: On the Semantics of Abstract State Machines .....	425
<i>Wolfram Schulte</i>	
<b>Author Index</b> .....	427