# Table of Contents

## Invited Paper

Type Checking Systems Code  .................................................. 1  
*Greg Morrisett (Cornell University, USA)*

## Typing and Modularity

Mixin Modules in a Call-by-Value Setting  .............................. 6  
*Tom Hirschowitz and Xavier Leroy (Inria Rocquencourt, France)*

Existential Types for Imperative Languages  ......................... 21  
*Dan Grossman (Cornell University, USA)*

Another Type System for In-Place Update  ............................. 36  
*David Aspinall (LFCS, Edinburgh, UK) and Martin Hofmann (University of Munich, Germany)*

## Programming Paradigms

Soft Concurrent Constraint Programming  ............................... 53  
*Stefano Bistarelli (CNR Pisa, Italy), Ugo Montanari (Università di Pisa, Italy), and Francesca Rossi (Università di Padova, Italy)*

Programming Languages for Compressing Graphics ...................... 68  
*Morgan McGuire, Shriram Krishnamurthi, and John F. Hughes (Brown University, USA)*

An Accumulative Parallel Skeleton for All  ......................... 83  
*Zhenjiang Hu (University of Tokyo, Japan), Hideya Iwasaki (University of Electro-Communications, Japan), and Masato Takeichi (Japan Science and Technology Corporation)*

Higher-Order Intensional Type Analysis  ............................. 98  
*Stephanie Weirich (Cornell University, USA)*

## Lambda Calculus

Branching Types  .............................................................. 115  
*Joe Wells and Christian Haack (Heriot-Watt University, UK)*

Exceptions, Continuations and Macro-expressiveness .................. 133  
*James Laird (University of Sussex, UK)*
A Theory of Second-Order Trees ........................................ 147
Neal Glew

**Program Analysis: Applications**

Tool Support for Improving Test Coverage ................................. 162
Susan Horwitz (University of Wisconsin and GrammaTech, USA)

Data Space Oriented Tiling ................................................... 178
Mahmut Kandemir (Pennsylvania State University, USA)

Propagation of Roundoff Errors in Finite Precision Computations: A Semantics Approach .............................................. 194
Matthieu Martel (CEA, France)

Asserting the Precision of Floating-Point Computations: A Simple Abstract Interpreter (demo paper) ................................. 209
Eric Goubault, Matthieu Martel, and Sylvie Putot (CEA, France)

**Program Analysis: Principles**

A Modular, Extensible Proof Method for Small-Step Flow Analyses ............................................................ 213
Mitchell Wand and Galen B. Williamson (Northeastern University, USA)

A Prototype Dependency Calculus ........................................... 228
Peter Thiemann (Universität Freiburg, Germany)

Automatic Complexity Analysis .............................................. 243
Flemming Nielson, Hanne Riis Nielson (The Technical University of Denmark, Lyngby), and Helmut Seidl (Universität Trier)

**Distributed Programs: Verification and Analysis**

Thread-Modular Verification for Shared-Memory Programs ............. 262
Cormac Flanagan, Stephen N. Freund, and Shaz Qadeer (Compaq Systems Research Center, Palo Alto, USA)

Timing UDP: Mechanized Semantics for Sockets, Threads and Failures ... 278
Keith Wansbrough, Michael Norrish, Peter Sewell, and Andrei Serjantov (University of Cambridge, UK)

Finite-Control Mobile Ambients .............................................. 295
Witold Charatonik (Max-Planck Institut für Informatik, Germany and University of Wroclaw, Poland), Andrew D. Gordon (Microsoft Research, UK), and Jean-Marc Talbot (LIFL, France)

Dependency Analysis of Mobile Systems .................................... 314
Jérôme Feret (ENS, Paris, France)

**Author Index** ................................................................. 331
Programming Languages and Systems
11th European Symposium on Programming, ESOP
2002, Held as Part of the Joint European Conferences
on Theory and Practice of Software, ETAPS 2002
Grenoble, France, April 8-12, 2002. Proceedings
Le Metayer, D. (Ed.)
2002, XII, 330 p., Softcover
ISBN: 978-3-540-43363-7