

## Preface

This volume contains the proceedings of SOS 2006, the *Third Workshop on Structural Operational Semantics*, held on 26th August 2006 in Bonn, Germany, as a satellite event of CONCUR 2006, the *17th International Conference on Concurrency Theory*.

Structural operational semantics (SOS) provides a framework for giving operational semantics to programming and specification languages. A growing number of programming languages from commercial and academic spheres have been given usable semantic descriptions by means of structural operational semantics. Because of its intuitive appeal and flexibility, structural operational semantics has found considerable application in the study of the semantics of concurrent processes. Moreover, it is becoming a viable alternative to denotational semantics in the static analysis of programs, and in proving compiler correctness.

Recently, structural operational semantics has been successfully applied as a formal tool to establish results that hold for classes of process description languages. This has allowed for the generalization of well-known results in the field of process algebra, and for the development of a meta-theory for process calculi based on the realization that many of the results in this field only depend upon general semantic properties of language constructs.

The SOS workshop series aims at being a forum for researchers, students and practitioners interested in new developments, and directions for future investigation, in the field of structural operational semantics. One of the specific goals of the series is to establish synergies between the concurrency and programming language communities working on the theory and practice of SOS. It also aims at widening the knowledge of SOS among postgraduate students and young researchers worldwide.

The First SOS Workshop took place on 30th August 2004 in London (UK) as a satellite event of CONCUR 2004, the *Fifteenth International Conference on Concurrency Theory*, and marked the publication of two special volumes (60–61) of the *Journal of Logic and Algebraic Programming* devoted to SOS; the proceedings appeared as ENTCS volume 128, issue 1. The second SOS Workshop took place on 10th July 2005 in Lisbon (Portugal) as a satellite event of ICALP 2005, the *The 32nd International Colloquium on Automata, Languages and Programming*; the proceedings of SOS 2005 appeared as ENTCS volume 156, issue 1; a special issue of *Theoretical Computer Science* based on selected papers is in preparation.

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The invited speakers at SOS 2006 gave overviews of work by themselves and others:

**Bartek Klin:** *Bialgebraic Methods in Structural Operational Semantics*

(the invited paper is included in these proceedings)

**Robin Milner:** *Local Bigraphs and Confluence: Two Conjectures*

(the joint Express/Infinity/SOS invited paper appears in the proceedings of the Express workshop)

The submitted papers presented at SOS 2006 span a particularly wide range of topics: *Modular SOS with strategies* (Braga and Verdejo), *SOS with backtracking* (Danos, Krivine, and Tarissan), *SOS rule formats* (Mousavi and Reniers), *reaction semantics* (Pilegaard, Nilesen, and Nielson), *Eclipse-based tool support for SOS* (Pop and Fritzson), and *probabilistic bisimulation* (Tini).

#### **Programme committee:**

- Rocco De Nicola (Florence, IT)
- Wan Fokkink (Amsterdam, NL)
- Rob van Glabbeek (NICTA, AU, co-chair)
- Reiko Heckel (Leicester, UK)
- Matthew Hennessy (Sussex, UK)
- Ugo Montanari (Pisa, IT)
- Peter Mosses (Swansea, UK, co-chair)
- MohammadReza Mousavi (Eindhoven, NL)
- David Sands (Chalmers, SE)
- Irek Ulidowski (Leicester, UK)
- Shoji Yuen (Nagoya, JP)

The submitted papers were carefully refereed by the programme committee and by several outside referees, whose help is gratefully acknowledged.

#### **Publication:**

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#### **Organization:**

We are grateful to the CONCUR 2006 organizers for taking care of the local organization, and for managing the printing of the preliminary proceedings. Support from National ICT Australia and Swansea University is also gratefully acknowledged.

*Rob van Glabbeek (National ICT Australia)*  
*Peter D. Mosses (Swansea University)*

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