

# **First International Workshop on Rewriting Techniques for Program Transformations and Evaluation**

**WPTE'14, July 13, 2014, Vienna, Austria**

Edited by

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### *ACM Classification 1998*

**A.0 Conference proceedings, D.3.1 Formal Definitions and Theory, D.3.4 Translator writing systems and compiler generators, F.3.1 Specifying and Verifying and Reasoning about Programs, F.3.2 Semantics of Programming Languages, F.4.1 Mathematical Logic, F.4.2 Grammars and Other Rewriting Systems, I.2.2 Automatic Programming,**

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## ■ Contents

### Preface

*Manfred Schmidt-Schauß, Masahiko Sakai, David Sabel, and Yuki Chiba* ..... i

### Session 1: Invited Talk

HERMIT: An Equational Reasoning Model to Implementation Rewrite System for Haskell  
*Andrew Gill* ..... 1

### Session 2

Verifying Optimizations for Concurrent Programs  
*William Mansky and Elsa L. Gunter* ..... 3

Inverse Unfold Problem and Its Heuristic Solving  
*Masanori Nagashima, Tomofumi Kato, Masahiko Sakai, and Naoki Nishida* ..... 15

Structural Rewriting in the Pi-Calculus  
*David Sabel* ..... 27

Attractor Equivalence: An Observational Semantics for Reaction Networks (abstract)  
*Guillaume Madelaine, Cédric Lhoussaine, and Joachim Niehren* ..... 39

### Session 3

On Proving Soundness of the Computationally Equivalent Transformation for Normal  
Conditional Term Rewriting Systems by Using Unravelings  
*Naoki Nishida, Makishi Yanagisawa, and Karl Gmeiner* ..... 41

Contextual Equivalences in Call-by-Need and Call-By-Name Polymorphically Typed  
Calculi (Preliminary Report)  
*Manfred Schmidt-Schauß and David Sabel* ..... 53

Verifying the Correctness of Tupling Transformations based on Conditional Rewriting  
(extended abstract)  
*Yuki Chiba* ..... 65

### Session 4

Notes on Structure-Preserving Transformations of Conditional Term Rewrite Systems  
*Karl Gmeiner and Naoki Nishida* ..... 69

A Complexity Preserving Transformation from Jinja Bytecode to Rewrite Systems  
(extended abstract)  
*Georg Moser and Michael Schaper* ..... 81



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## Preface

This document contains the papers and (extended) abstracts presented at the *First International Workshop on Rewriting Techniques for Program Transformations and Evaluation (WPTE 2014)* which was held on July 13, 2014 in Vienna, Austria during the *Vienna Summer of Logic 2014 (VSL 2014)* as a workshop of the *Sixth Federated Logic Conference (FLoC 2014)*. WPTE 2014 was affiliated with the *25th International Conference on Rewriting Techniques and Applications joined with the 12th International Conference on Typed Lambda Calculi and Applications (RTA/TLCA 2014)*.

### Scope of WPTE

Verification and validation of properties of programs, optimizing and compiling programs, and generating programs can benefit from the application of rewriting techniques. Source-level program transformations are used in compilation to simplify and optimize programs, in code refactoring to improve the design of programs; and in software verification and code validation, program transformations are used to translate and/or simplify programs into the forms suitable for specific verification purposes or tests. Those program transformations can be translations from one language into another one, transformations inside a single language, or the change of the evaluation strategy within the same language.

Since rewriting techniques are of great help for studying correctness of program transformations, translations and evaluation, the aim of WPTE is to bring together the researchers working on program transformations, evaluation, and operationally based programming language semantics, using rewriting methods, in order to share the techniques and recent developments and to exchange ideas to encourage further activation of research in this area.

Topics in the scope of WPTE include the correctness of program transformations, optimizations and translations; program transformations for proving termination, confluence and other properties; correctness of evaluation strategies; operational semantics of programs, operationally-based program equivalences such as contextual equivalences and bisimulations; cost-models for arguing about the optimizing power of transformations and the costs of evaluation; program transformations for verification and theorem proving purposes; Translation, simulation, equivalence of programs with different formalisms, and evaluation strategies; program transformations for applying rewriting techniques to programs in specific programming languages; program inversions and program synthesis.

### WPTE 2014

The program of WPTE 2014 consists of 10 talks where 6 regular research papers and 3 (extended) abstracts were accepted out of the submissions. In addition to the contributed papers, the WPTE program contains an invited talk by Andrew Gill.

WPTE 2014 had two Program Chairs to allow submissions from the program committee and also from the chairs. Each submission was reviewed by at least three members of the Program Committee, with the help of two external reviewers. Reviewing of submissions with a program chair as coauthor was handled by the respective other program chair. This politics also permitted to cope with other conflicts of interest where a chair was involved.

Paper submission, reviewing, and the electronic meeting of the program committee used the great EasyChair system of Andrei Voronkov, which was also indispensable for preparing the WPTE program and collecting the papers for these proceedings.

In addition to these participant's proceedings the accepted regular papers will be published as formal proceedings in the OpenAccess Series in Informatics (OASICS) by Schloss Dagstuhl–Leibniz-Zentrum für Informatik.

### Acknowledgment

We thank the “Vereinigung von Freunden und Förderern der Johann Wolfgang Goethe Universität Frankfurt am Main e.V.” for its financial support of WPTE 2014. Particularly, we thank Dustin Ortlepp for his advice during the application and the Dean of the Computer Science and Mathematics Department of the Goethe-University Thorsten Theobald for his support on our application.

Many people helped to make WPTE a successful event. We thank the organizers of VSL 2014: Florian Aigner, Matthias Baaz, Katinka Böhm, Agata Ciabattoni, Barbara Dolezal-Rainer, Thomas Eiter, Chris Fermüller, Sy David Friedman, Ursula Gerber, Georg Gottlob, Bernhard Gramlich, Franziska Gusel, Thomas Henzinger, Elisabeth Hofmann, Katarina Jurik, Jakob Kellner, Konstantin Korovin, Laura Kovács, Oliver Lehmann, Alexander Leitsch, Nysret Musliu, Thomas Pani, Anna Petukhova, Markus Pichlmair, Toni Pisjak, Norbert Preining, Vesna Sabljakovic-Fritz, Gernot Salzer, Matthias Schlögel, Martina Seidl, Stefan Szeider, Helmut Veith, Daniel Weller and the organizers of FLoC 2014 Matthias Baaz, Azadeh Farzan, Thomas Krennwallner, Moshe Y. Vardi, Helmut Veith, and especially the FLoC Workshop Chair Stefan Szeider and the FLoC Workshop Co-Chair Stefan Rümmele.

We thank the organizers of RTA/TLCA 2014 for hosting our workshop; and we are particularly indebted to the RTA/TLCA Workshop Chair Aleksy Schubert for his help in applying for this workshop.

We thank our publisher of the formal proceedings Schloss Dagstuhl–Leibniz-Zentrum für Informatik for publishing our proceedings in the OpenAccess Series in Informatics (OASICS). In particular we would like to thank Marc Herbstritt for his very helpful and always prompt support during production of the OASICS proceedings.

Finally we thank the members of the program committee for their careful reviewing of all submissions and we thank the participants for their valuable contributions.

June 2014

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