



UNIVERSITÀ DI SIENA 1240



17th International
Symposium on

**Principles and Practice
of Declarative
Programming**

**PPDP 2015 SIENA 14-16
JULY**

25th International
Symposium on

**Logic-Based Program
Synthesis and
Transformation**

**LOPSTR 2015 SIENA JULY
13-15**

**ALL TALKS OF JULY 13 AND OF PPDP ARE IN ROOM 101.
ALL INVITED TALKS (PLENARY SESSIONS) ARE IN ROOM 101.
THE PARALLEL SESSIONS OF LOPSTR ARE IN ROOM 103.**

MONDAY JULY 13 (ROOM 101)

08:45-09:50 - LOPSTR/PPDP Registration

09:50-10:00 - Welcome to LOPSTR 2015 – Moreno Falaschi

10:00-11:00 - SEMANTICS OF LOGIC LANGUAGES (Chair: Moreno Falaschi)

Hirohisa Seki

On Dual Programs in Co-logic Programming

José Meseguer and Stephen Skeirik

Equational Formulas and Pattern Operations in Initial Order-Sorted Algebras

11:00-11:30 Coffee Break

11:30-12:30 - Efficient compilation of functional logic programs (Chair: Germán Vidal)

Sergio Antoy and Andy Jost

Compiling Collapsing Rules

Sergio Antoy and Michael Hanus

From Boolean Equalities to Constraints

12:30-14:00 Lunch Break

14:00-15:00 - Invited talk (Chair: Hirohisa Seki)

GILLES BARTHE

Towards Verified Cryptographic Implementations

15:00-16:00 - TYPES AND SECURITY (CHAIR: RICARDO PEÑA)

Peng Fu and Ekaterina Komendantskaya

A Type-Theoretic Approach to Structural Resolution

Sandra Alves, Sabine Broda and Maribel Fernandez

A typed language for events

16:00-16:30 Coffee Break

16:30-17:30 – OPTIMIZATION (CHAIR: MAURIZIO PROIETTI)

Michael Codish, Luís Cruz-Filipe, Markus Nebel and Peter Schneider-Kamp

Applying Sorting Networks to Synthesize Optimized Sorting Libraries

Nasrine Damouche, Matthieu Martel and Alexandre Chapoutot

Impact of Accuracy Optimization on the Convergence of Numerical Iterative Methods

TUESDAY 14 JULY

08:15-08:45 - PPDP Registration

08:45-09:00 Welcome to PPDP 2015 (Room 101)

Elvira Albert

9:00-10:00 Chair: **Elvira Albert** (Room 101)

Invited Talk - PATRICK COUSOT

"Verification by Abstract Interpretation, Soundness and Abstract Induction"

10:00-10:30 *Coffee Break*

PPDP SESSIONS (Room 101)

10:30-12:30 SESSION ON FUNCTIONAL PROGRAMMING

Chair: **Germán Vidal**

10:30-11:00 - **Aggelos Giantsios, Nikolaos Pappaspyrou and Konstantinos Sagonas**
"Concolic Testing for Functional Languages"

11:00-11:30 - **Manfred Schmidt-Schauss and David Sabel**
"Improvements in a Functional Core Language with Call-By-Need Operational Semantics"

11:30-12:00 **Exequiel Rivas, Mauro Jaskelioff and Tom Schrijvers**
"From monoids to near-semirings: the essence of MonadPlus and Alternative"

12:00-12:30 **Christopher Meiklejohn and Peter Van Roy**
"Lasp: A Language for Distributed, Coordination-Free Programming"

12:30-14:00 *Lunch break*

14:00-16:00 **SESSION ON LOGIC**

Chair: **Dale Miller**

14:00-14:30 **Paul Tarau**
"On a Uniform Representation of Combinators, Arithmetic, Lambda Terms and Types"

14:30-15:00 **Panos Rondogiannis and Antonis Troumpoukis**
"Expressing Preferences in Logic Programming using an Infinite-Valued Logic"

15:00-15:30 **Roman Bartak, Agostino Dovier and Neng-Fa Zhou**
"On modeling planning problems in logic programming"

15:30-16:00 **Taus Brock-Nannestad, Nicolas Guenot and Daniel Gustafsson**
"Computation in Focused Intuitionistic Logic"

LOPSTR SESSIONS (Room 103)

10:30-12:00 - STATIC ANALYSIS

CHAIR: **MICHAEL CODISH**

Marco Comini, Maria Del Mar Gallardo, Laura Titolo and Alicia Villanueva
"Abstract analysis of universal properties for tccp"

Chiara Bodei, Linda Brodo, Roberta Gori, Diana Hermith and Francesca Levi
"An Analysis of Non Determinism in Membrane Interactions"

Heiko Mantel, Markus Müller-Olm, Matthias Perner and Alexander Wenner
"Using Dynamic Pushdown Networks to Automate a Modular Information-Flow Analysis"

14:00-15:00 - DEBUGGING AND SLICING

Chair: **Sergio Antoy**

David Insa and Josep SILVA
"A Generalization and Paradigm-Independent Reformulation of Algorithmic Debugging"
Marisa Llorens, Javier Oliver, Josep Silva and Salvador Tamarit
"Dynamic Slicing of CSP Via Tracking"

15:00-16:00 - AUTOMATED VERIFICATION I

Chair: **Alberto Pettorossi**

Rafael Caballero, Manuel Montenegro, Herbert Kuchen and Vincent von Hof
"Checking Java Assertions Using Automated Test-Case Generation"
Adrian Palacios and German Vidal
"Concolic Execution in Functional Programming by Program Instrumentation"

16:00-16:30 *Coffee Break*

**16:30-17:30 MOST INFLUENTIAL PPDP'05
PAPER**

Chair: **Tom Schrijvers**

Louis Mandel and Marc Pouzet
"ReactiveML, Ten Years Later"

**16:30-17:30 - MEMORY ANALYSIS AND
SMART ENVIRONMENTS**

CHAIR: **HERBERT KUCHEN**

**Adrian Riesco, Mihail Asavoae and Irina
Mariuca Asavoae**
*Memory Policy Analysis for Semantics
Specifications in Maude*
Serge Autexier and Dieter Hutter
*SHIP - A Logic-Based Language and Tool to
Program Smart Environments*

WEDNESDAY 15 JULY

9:00-10:00 **Invited Talk** – Chair **Moreno Falaschi**

DALE MILLER

"Proof checking and logic programming"

10:00-10:30 *Coffee Break*

PPDP SESSIONS (Room 101)

10:30-12:30 **SESSION ON ANALYSIS AND VERIFICATION**

Chair: **Patrick Cousot**

10:30-11:00 **Emanuele De Angelis, Fabio Fioravanti, Alberto Pettorossi and Maurizio Proietti**

"Semantics-based generation of verification conditions by program specialization"

11:00-11:30 **Abeer Al-Humaimedy and Maribel Fernandez**

"Enhancing the Specification and Verification Techniques of Multiparty Sessions in SOC"

11:30-12:00 **Abel Garcia, Cosimo Laneve and Michael Lienhardt**

"Static analysis of cloud elasticity"

12:00-12:30 **Thom Fruehwirth**

"A Devil's Advocate against Termination of Direct Recursion"

12:30-13:00 **Chen Chen, Lay Kuan Loh, Limin Jia, Wenchao Zhou and Boon Thau Loo**

"Automated Verification of Safety Properties in Declarative Networking Programs"

LOPSTR SESSIONS (Room 103)

10:30-11:30 - **CONSTRAINT SOLVING AND PROGRAMMING** (Chair: **Michael Hanus**)

Roberto Amadini, Maurizio Gabbriellini and Jacopo Mauro

Why CP portfolio solvers are (under)utilized? Issues and challenges

Arwa Ismail, Nada Sharaf and Slim Abdennadher

CHR in Action

11:30-13:00 - **AUTOMATED VERIFICATION II**

Manuel Montenegro, Ricardo Peña and Jaime Sánchez-Hernández

A Generic Intermediate Representation for Verification Condition Generation

Dipak L. Chaudhari and Om Damani

Combining Top-down and Bottom-up Techniques in Program Derivation

Koichi Sato, Kentaro Kikuchi, Takahito Aoto and Yoshihito Toyama

Correctness of Context-Moving Transformations for Term Rewriting Systems

13:00-14:00 *Lunch break*

18:30-20:30 *Excursion*

20:30 *Social Dinner at Rectorate Palace*

THURSDAY 16 JULY (PPDP – Room 101)

9:00-10:00 **Invited Talk** - Chair: **Ricardo Peña**

MARTIN HOFMANN

"Automatic Amortized Analysis"

10:00-10:30 *Coffee Break*

10:30-12:30 **SESSION ON CONCURRENCY** (Chair: **Fabio Fioravanti**)

10:30-11:00 **Mauricio Cano, Hugo A. López, Jorge A. Pérez and Camilo Rueda**
"Declarative Interpretations of Session-Based Concurrency"

11:00-11:30 **Quentin Stievenart, Jens Nicolay, Wolfgang De Meuter and Coen De Roover**
"Detecting Concurrency Bugs in Higher-Order Programs through Abstract Interpretation"

11:30-12:00 **Johan Grande, Gérard Boudol and Manuel Serrano**
"Jthread, a deadlock-free mutex library"

12:00-12:30 **Stefan Haar, Salim Perchy, Camilo Rueda and Frank D. Valencia**
"An Algebraic View of Space/Belief and Extrusion/Utterance for Concurrency/Epistemic Logic"

12:30-14:00 *Lunch break*

14:00-15:30 **SESSION ON CONSTRAINTS**

14:00-14:30 **Thierry Martinez, François Fages and Sylvain Soliman**
"Search by Constraint Propagation"

14:30-15:00 **Rafael Caballero, Yolanda García-Ruiz and Fernando Saenz-Perez**
"Debugging of Wrong and Missing Answers for Datalog Programs with Constraint Handling Rules"

15:00-15:30 **Daniel Gall and Thom Fruehwirth**
"A Refined Operational Semantics for ACT-R"