

DICE 2014

5th Workshop on

Developments in Implicit Computational Complexity

5-6 April 2014, Grenoble, France

Call for Papers



Invited Speakers

Dan Ghica, *University of Birmingham*

Akitoshi Kawamura, *University of Tokyo*

Damiano Mazza, *CNRS-University of Paris 13, LIPN*

Georg Moser, *University of Innsbruck*

Scope and Topic

The area of Implicit Computational Complexity (ICC) has grown from several proposals for using logic and formal methods to provide languages for complexity-bounded computation (e.g. PTIME, LOGSPACE computation). Its aim is to study computational complexity without reference to external measuring conditions or particular machine models, but only in terms of language restrictions or logical/computational principles implying complexity properties.

This workshop focuses on ICC methods related to programs (rather than descriptive methods). In this approach one relates complexity classes to restrictions on programming paradigms (functional programs, lambda calculi, rewriting systems), such as ramified recurrence, weak polymorphic types, linear logic and linear types, and interpretative measures. The two main objectives of this area are:

- to find natural implicit characterizations of various complexity classes of functions, thereby illuminating their nature and importance;
- to design methods suitable for static verification of program complexity.

These goals connect both to the study of complexity classes and to static program analysis. The workshop is open to contributions on various aspects of ICC including (but not exclusively):

- types for controlling complexity
- logical systems for implicit computational complexity
- linear logic
- semantics of complexity-bounded computation
- rewriting and termination orderings
- interpretation-based methods for implicit complexity
- programming languages for complexity-bounded computation
- theoretical foundations of program complexity analysis
- application of implicit complexity to security

Submission

Authors are invited to submit an **extended abstract of up to 5 pages**. Submission instructions can be found at:

<http://dice14.tcs.ifi.lmu.de>

Accepted abstracts will be presented at the workshop.

Submissions will be judged on originality, relevance, interest and clarity. Preference will be given to abstracts describing work (including work in progress) that has not been published elsewhere before the workshop. Any previous publication or submission of submitted work should be clearly indicated in the submission. The workshop will not have formal proceedings and is not intended to preclude later publication at another venue.

Important Dates

Submission: 5 January 2014

Notification: 20 January 2014

Final version: 10 February 2014

Workshop: 5-6 April 2014

Program Committee

Martin Avanzini
University of Innsbruck

Amir Ben-Amram
Tel-Aviv Academic College

Pierre Clairambault
CNRS & ENS Lyon

Daniel de Carvalho
*Datalogisk Institut,
Københavns Universitet*

David Nowak
CNRS & Lille 1 University

Michele Pagani
LIPN – Université de Paris 13

Romain Péchoux
Université de Lorraine

Brian Redmond
Grande Prairie Regional College

Ulrich Schöpp
LMU Munich (Chair)

Kazushige Terui
RIMS, Kyoto University

Steering Committee

Patrick Baillot
ENS Lyon, CNRS

Ugo Dal Lago
Università di Bologna

Martin Hofmann
LMU Munich

Jean-Yves Marion
Université de Lorraine

Simona Ronchi Della Rocca
Università di Torino