Third International Workshop on

Developments in Implicit Complexity (DICE 2012)

March 31st and April 1st, 2012, Tallinn, Estonia
Satellite Workshop of ETAPS 2012

`http://dice2012.cs.unibo.it`

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Scope. The area of Implicit Computational Complexity (ICC) has grown out from several proposals to use logic and formal methods to provide languages for complexity-bounded computation (e.g. polytime or logspace computation). It aims at studying computational complexity without referring to external measuring conditions or a particular machine model, but only by considering language restrictions or logical 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.

Therefore ICC is related on the one hand to the study of complexity classes, and on the other hand to static program analysis. The workshop will be 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,
- application of implicit complexity to other programming paradigms (e.g. imperative or object-oriented languages).

The first two DICE workshops were held in 2010 in Cyprus and in 2011 in Germany, both as part of ETAPS conferences. Before that, several meetings on this topic had already been held with success in Paris (WICC 2008), and Marseille (GEOCAL 2006 workshop on Implicit computational complexity).

Important Dates. The following deadlines are strict.

- Paper Submission (*full papers*): December 23rd, 2011;
- Notification (*full papers*): January 20th, 2012;
- Final Version (*full papers*): February 5th, 2012;
- Submission (*extended abstracts*): February 18th, 2012;
- Notification (*extended abstracts*): February 28th, 2012.

Submissions. There will be two categories of submissions:

- *Full papers*, of up to 15 pages;
- *Extended abstracts for short presentations* (not included in the proceedings), of up to 3 pages.

Authors must indicate if their submission belongs to the second category (by adding "(Extended Abstract)" in the title). Papers must be submitted electronically, as pdf files, at the following page: `https://www.easychair.org/conferences/?conf=dice2012`. Submissions of the first category (full papers) should not have been published before or submitted simultaneously to another conference or journal. This restriction does not hold for the second category (extended abstracts). Submissions of papers authored by PC members are allowed and encouraged. We plan to publish proceedings in EPTCS.