

REPORT ON CALCO 2013

5th Conference on Algebra and Coalgebra in Computer Science

3–6 September 2013, Warsaw, Poland

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Calco 2013, the 5th International conference on Algebra and Coalgebra in Computer Science, took place in Warsaw, Poland, 2nd – 6th September 2013, in the beautiful setting of the Old Library building on the historical campus of the University of Warsaw.

The first day was dedicated to the Calco Early Ideas workshop, devoted to presentation of work in progress, with a particular emphasis on talks by PhD students and young researchers. This workshop is the follower of Calco-jnr.

The other workshop affiliated with Calco, Calco-Tools, is dedicated to work on tools based on algebraic and/or coalgebraic principles. This year it took place in-lined with the main conference which led to discussion during the business meeting about the possibility of making Calco-Tools a track of the main conference instead of a separate workshop.

There were four invited talks: **Andrej Bauer** (University of Ljubljana, Slovenia), **Damien Pous** (CNRS, ENS-Lyon, France), Mikołaj Bojańczyk (Warsaw University, Poland) and **Neil Ghani** (University of Strathclyde, United Kingdom).

Andrej Bauer opened the conference proper with an invited talk about how effects can be treated in a strikingly elegant way within a functional setting. The ideas of Plotkin and Power, who used Lawvere theories instead of monads, have led Andrej and his collaborators to design a programming language where effects can sometimes be combined in an easier and more transparent way, as was illustrated with a number of compelling examples.

The second morning session concerned coalgebraic logics and consisted of four stimulating talks. The afternoon featured the first session of Calco Tools, including a couple of talks with a strong Haskell flavour, and closed with a session on Categorical Structures. In the evening we were treated to a reception at the Tyszkiewicz-Potocki Palace on campus, featuring an official welcome by Andrzej Tarlecki.

The second day started with Damien Pous' invited talk on *Coalgebraic up-to techniques*. Damien talked about several enhancements to the bisimulation proof method that enable shorter proofs. He illustrated the application of the new techniques with basic examples from automata theory which made the talk very accessible (but not less impressive!).

The rest of the morning was filled with one Calco-Tools session, consisting of four talks. Peter Ölveczky gave two talks on Maude-related tools and presented a very compelling (and somewhat morbid) case study on the Finnish Sauna Championships (and the death of the world champion). The afternoon included a session on the semantics of processes, featuring an excellent presentation on dialgebraic modelling by Vincenzo Ciancia, which was awarded the inaugural Best Presentation award—more on this later! The final session concerned logic programming.

The third day was kicked off by a fantastic talk by Mikołaj Bojańczyk on *Automata and Algebras for Infinite Words and Trees*. He reviewed classical work on automata theory and then briefly explained two open problems which he thinks might have a coalgebraic solution. The morning continued with a session on *Behaviour Modelling*, which included 4 talks. Let us highlight Pierre Lescanne's talk on how coalgebra can be applied in economics!

In the afternoon, there was the social event: a walking tour through the historic centre of Warsaw. We visited several buildings where famous mathematicians lived and had the chance to see the beautiful library of the university with an extensive garden where students hang out (whenever the weather allows!).

The social dinner in the evening was at *Kuźnia Smaku*. Before dessert Jan Rutten and Stefan Milius gave a speech which led to one of the highlights of the evening. Filippo Bonchi and Fabio Zanasi were awarded the Best Paper Award for their paper *Saturated Semantics for Coalgebraic Logic Programming*. Congratulations!

In addition to the Best Paper Award, included also a Best Presentation Award. The audience had access to an online voting system where, in addition to a score, they could leave comments to the participants with suggestions for improvements for the future. We think this is a neat idea and might help increase the quality of presentations in the future, therefore making the conference even more enjoyable to attend! The slides of this year's talks are online.

The local organizers did stupendous work and deserve our warmest thanks for making a successful event!

The next will take place in 2015, in the picturesque city of Nijmegen, in The Netherlands. It will be co-located with MFPS, the Mathematical Foundations of Programming Semantics conference.