CCC 2019

Computability, Continuity, Constructivity — from Logic to Algorithms

Faculty of Mathematics and Physics, Ljubljana
2–6 September 2019

Programme

Monday 2nd September

8.30-8.55 Arrival and registration

8.55-9.00 Welcome

9.00-10.00 Invited talk: Florian Steinberg (Inria Saclay, France)
Self-modulating moduli and continuous machines

10.00-10.30 *coffee break*

10.30–11.15 Samuele Maschio (University of Padova, Italy)
A constructive predicative realizability topos for inductively generated formal topology
Authors: Maria Emilia Maietti and Samuele Maschio

11.15–12.00 Davorin Lešnik (University of Ljubljana, Slovenia)
Haar Measure in Synthetic Topology

12.00–14.00 *Lunch*

14.00–15.00 Tutorial: Helmut Schwichtenberg (LMU Munich, Germany)
Computational Content of Proofs (Part 1)

15.00–15.30 *coffee break*

15.30–16.15 Norbert Th. Müller (University of Trier, Germany)
Joint approximations for multivariate real functions
Franz Brauße, Margarita Korovina and Norbert Th. Müller

16.15–17.00 Andrej Bauer (University of Ljubljana, Slovenia)
Instance reducibility and extended Weihrauch degrees
Authors: Andrej Bauer and Kazuto Yoshimura

Tuesday 3rd September

9.00-10.00 Invited talk: Fabian Immler (Carnegie Mellon University, USA)

A Verified ODE Solver and Smale's 14th Problem

10.00-10.30 *coffee break*

10.30–11.15 Elvira Mayordomo (University of Zaragoza, Spain)

The Hyperspace Dimension Theorem

Authors: Jack H. Lutz and Elvira Mayordomo

11.15–12.00 Martin Ziegler (KAIST, South Korea)

Randomized Computation of Continuous Data: Is Brownian Motion Strongly Computable?

Authors: Willem Fouché, Hyunwoo Lee, Donghyun Lim, Sewon Park, Matthias Schröder and Martin Ziegler

12.00–14.00 *Lunch*

14.00–15.00 Tutorial: Helmut Schwichtenberg (LMU Munich, Germany)

Computational Content of Proofs (Part 2)

15.00–15.30 *coffee break*

15.30–16.15 Daniel Graça (University of Algarve, Portugal)

Computing the limit set of planar differential equations

Authors: Daniel Graça and Ning Zhong

16.15–18.00 *Meetings: CID project members; Training board*

Wednesday 4th September

9.00-10.00 Invited talk: Hannes Diener (University of Canterbury, New Zealand)
Completeness is Overrated

10.00-10.30 *coffee break*

10.30–11.15 Chuangjie Xu (LMU Munich, Germany)
A Gentzen-style translation of Gödel's System T

11.15–12.00 Sewon Park (KAIST, South Korea)
Axiomatic Reals in Type Theory for Program Extraction

12.00–14.00 *Lunch*

14.00–15.00 *Experiences of outreach*

15.00–15.30 *coffee break*

15.30–17.00 *Free time*

17.00–18.45 Excursion: Guided tour of Ljubljana followed by boat trip to restaurant.
For guided tour meet at 16.55 in front of *Slaščičarna Lolita*, Cankarjevo nabrežje 1.
If coming on boat trip only, meet at 17.55 in front of *Slaščičarna Lolita*.

18.45–late Dinner at *Gostilna Livada*, Hladnikova cesta 15.
Either arrive by boat from excursion, or make your own way to the restaurant.

Thursday 5th September

9.00-10.00 Invited talk: Holger Thies (Kyushu University, Japan)

Analytic ordinary differential equations — From computational complexity to efficient and verified algorithms

10.00-10.30 *coffee break*

10.30–11.15 Matthew de Brecht (Kyoto University, Japan)

A note on the spatiality of localic products of countably based sober spaces

11.15–12.00 Martín Escardó (University of Birmingham, UK)

Equality of mathematical structures

12.00–14.00 *Lunch*

14.00–15.00 Tutorial: Helmut Schwichtenberg (LMU Munich, Germany)

Computational Content of Proofs (Part 3)

15.00–15.30 *coffee break*

15.30–16.15 Niels Voorneveld (University of Ljubljana, Slovenia)

Tensors of Quantitative Truth and the Combination of Algebraic Effects

16.15–17.00 Tom de Jong (University of Birmingham, UK)

The Scott Model of PCF in Univalent Type Theory

Friday 6 September

9.00-10.00 Invited talk: Thomas Streicher (TU Darmstadt, Germany)

An effective spectral theorem for bounded self-adjoint operators within computable analysis (TTE)

10.00-10.30 *coffee break*

10.30–11.15 Dieter Spreen (University of Siegen, Germany)

The Compact Hyperspace Monad, a Constructive Approach

11.15–12.00 ~~Victor Selivanov (A.P. Ershov Institute and Kazan Federal University, Russia)~~

~~*Wadge Hierarchy in Quasi-Polish Spaces*~~

[Talk cancelled]

12.00–14.00 *Lunch*

End of meeting

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