



Computational Approaches to the Foundations of Mathematics

April 11 to 13, 2018

International Workshop organized by Sam Sanders, (LMU), Peter Schuster (University of Verona), and Helmut Schwichtenberg (LMU)

Wednesday, 11 April 2018 (Venue: Center for Advanced Studies, LMU Munich)

18:00 Keynote Lecture by **Matthias Baaz** (TU Vienna)
The Concept of Proof

19:30 Conference Dinner (Gasthaus Weinbauer)

Thursday, 12 April 2018 (Venue: Mathematisches Institut, room B349, LMU Munich)

09:00 – 10:00 **Ulrich Kohlenbach** (TU Darmstadt)
Proof-theoretic Methods in Convex Optimization

10:00 – 10:45 **Michael Rathjen** (University of Leeds)
Definite mathematical problems, indefinite extensibility and semi-intuitionistic theories of sets

10:45 – 11:15 Coffee Break

11:15 – 12:00 **Joost J. Joosten** (University of Barcelona)
The Turing jump interpretation of transfinite provability logic

12:00 – 12:45 **Benno van den Berg** (University of Amsterdam)
Homotopy type theory with explicit conversions

12:45 – 13:45 Lunch Break

13:45 – 14:30 **Silvia Steila** (University of Bern)
Computing the least fixed point in weak set theories

14:30 – 15:15 **Anton Freund** (TU Darmstadt)
On Polynomial Consistency Proofs

15:15 – 15:45 Coffee Break

15:45 – 16:30 **John Longley** (University of Edinburgh)
Separating sublanguages of PCF

16:30 – 17:00 **Bruno Dinis** (University of Lisbon)
Intuitionism, nonstandard arithmetic and functional interpretations

Friday, 13 April 2018 (Venue: Mathematisches Institut, room B349, LMU Munich)

- 09:00 – 10:00 **Douglas Cenzer** (University of Florida)
Algorithmically random continuous functions
- 10:00 – 10:45 **Thomas Powell** (TU Darmstadt)
Ideal objects and abstract machines
- 10:45 – 11:15 Coffee Break
- 11:15 – 12:00 **Sam Sanders** (Postdoc-Fellow MCMP/CAS)
On the mathematical and foundational significance of the uncountable
- 12:00 – 12:45 **Imme van den Berg** (University of Evora)
On convergence in finite time
- 12:45 – 13:45 Lunch Break
- 13:45 – 14:30 **Fernando Ferreira** (University of Lisbon)
On the removal of weak compactness arguments
- 14:30 – 15:15 **Dag Normann** (University of Oslo)
A comparative study of the Heine-Borel theorem, the Lindelöf Lemma
and non-monotone inductive definitions of sets of integers.
- 15:15 – 15:45 Coffee Break
- 15:45 – 16:30 **Reinhard Kahle** (New University of Lisbon)
Computations in Mathematical Foundations - How did we get lost here?
- 16:30 – 17:00 **Pedro Pinto** (University of Lisbon)
Concrete examples of the elimination of weak compactness

Venue Keynote Lecture on Wednesday:

Center for Advanced Studies, Seestraße 13, 80802 München

Venue Workshop on Thursday and Friday:

Mathematical Institute - Room B349, Theresienstraße 39, 80333 München

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