

May - August 2018



Hausdorff Trimester Program

Types, Sets and Constructions

Organizers: Douglas S. Bridges, Michael Rathjen, Peter Schuster, Helmut Schwichtenberg

Type theory, originally conceived as a bulwark against the paradoxes of naive set theory, was soon overtaken by axiomatic set theory as a foundation of mathematics. Its first renaissance occurred with Bishop's constructive mathematics and the advent of computers. A second quite recent one not only champions type theory as a framework for the goal of a formalized mathematics amenable to verification by computer-based proof assistants, but also finds deep and unexpected connections between type and homotopy theory. An overarching feature is the constructive approach which distinguishes itself from the classical by insisting that proofs of existential theorems must afford means for exhibiting an instance. The resulting intuitionistic reasoning emerges naturally in core areas of mathematics.

The program will include a **Spring School** addressed to PhD students and postdocs (May 14 - May 18) and **three major workshops**

- Types, Homotopy Type theory, and Verification (June 4 - June 8)
- Proofs and Computation (July 2 - July 6)
- Constructive Mathematics (August 6 - August 10)

Those planning to participate include:

Peter Aczel
 Toshiyasu Arai
 Sergei Artemov
 Steve Awodey
 Andrej Bauer
 Ulrich Berger
 Thierry Coquand

Martín Escardó
 Sy Friedman
 Rosalie Iemhoff
 Hajime Ishihara
 Gerhard Jäger
 Peter Koellner
 Ulrich Kohlenbach

Robert Lubarsky
 Maria Emilia Maietti
 Per Martin-Löf
 Paul-André Mellies
 Sara Negri
 Paulo Oliva
 Erik Palmgren

Giuseppe Rosolini
 Giovanni Sambin
 Dana Scott
 Monika Seisenberger
 Andreas Weiermann
 Vladimir Voevodsky
 Ihsen Yengui



Call for participation: The Hausdorff Research Institute offers visiting positions for the whole period of the trimester program (for senior scientists, postdocs and PhD students). The deadline for applications is **October 31, 2017**. Please send applications (including CV and, for postdocs and PhD students, a letter of recommendation) using our online application form at www.him.uni-bonn.de/types-sets-constructions/. In addition numerous fellowships for shorter periods are available.