INFINITY CONFERENCE

1. Summary

The Infinity Conference was the culmination of the CRM Infinity Project, funded by the John Templeton Foundation over the two-year period 2009-2011. The aim of the project was to bring together leading scholars in different areas of mathematical logic and the history/philosophy of set theory to initiate unusual new collaborations, resulting in unanticipated interdisciplinary results. The aim of the conference was to synthesise the results of the project and to attract additional scholars to the rapidly-developing new movement in logic aimed at interdisciplinary research.

2. Scientific content

The lectures were distributed across 6 interdisciplinary topics (History and Philosophy of Set Theory, Computations and Models, Computations and Proofs, Computations and Sets, Models and Sets, Proofs and Sets) and were unusually accessible to a broad audience of logicians. Due to its emphasis on interdisciplinarity, the lectures were exceptionally accessible to a broad audience and resulted in an extraordinary amount of lively interaction between speaker and audience. The participants were left with an unanticipated new understanding of many areas of logic and the conference had a major influence on the thinking of a number of leading logicians.

3. Scientific impact

The main objective of the conference was to attract leading logicians to take an active interest in interdisciplinary work. This goal was thoroughly achieved as witnessed by the lively discussions during and after the lectures that were given. The conference concluded with overwhelming enthusiasm for a continuation of the Infinity Project and thanks to the success of the meeting, it can be expected that a subsequent project will attract great interest within the mathematical logic community. The articles resulting from the project will be collected into a volume to be available early in 2012. The unusual collaborations that were begun in the project will continue for the foreseeable future. Indeed the Infinity Project concept of interdisciplinarity within the field of logic will permeate the eld of logic in the years to come.

4. Final programme

Monday, July 18

09:30 - 09:50
Sy-David Friedman, University of Vienna
Opening remarks
09:50 - 10:40
Andreas Weiermann, University of Ghent
Degree theory for provably recursive functions and unprovability phase transitions, PS
11:00 - 11:50
Andres Villaveces, Universidad Nacional de Colombia
Categoricity and amalgamation at low cardinalities: weak diamonds versus forcing, MS
12:00 - 12:50
Antonio Montalban, University of Chicago
The boundary of determinacy within second order arithmetic, CS

Lunch

15:00 - 15:50
Arnold Beckmann, Swansea University
Safe Recursive Set Functions, CS
16:00 - 16:50
Colin McLarty, Case Western Reserve University
Grothendieck's Reflection Principle: Number Theory with a set that the operations of Set Theory do not go beyond, HPS
17:10 - 18:00
Tapani Hyttinen, Helsinki University
Constructing groups and fields from a geometry, MS
18:10 - 18:40
Vadim Kulikov, Helsinki University
Borel Equivalence Relations on 2^κ, $\kappa > \omega$

Tuesday, July 19

09:30 - 10:20
Joerg Flum, Universitaet Freiburg
The Myriad Applications of a Halting Problem, CP
10:40 - 11:30
John Baldwin, University of Illinois at Chicago Calculating Hanf Numbers, MS
11:50 - 12:40
Julia Knight, University of Notre Dame Comparing classes of countable structures, CM

Lunch

15:00 - 15:50
Lars Kristiansen, University of Oslo
Subrecursive degrees of honest functions and provably recursive functions, PS
16:00 - 16:30
Alexander Gavryushkin, Irkutsk State University
Finite structures, Fraisse limits, Ehrenfeucht theories. Computability aspects
16:40 - 17:10
BingKai Lin, Shanghai Jiao Tong University
The Parametrised Complexity of K-edge Induced Subgraphs
17:30 - 18:00
Denis Saveliev, Moscow State University
Ultrafilters Without Choice
18:10 - 18:40
Gunnar Wilken, Okinawa University
Infinitary Concepts and Goedel's T

Wednesday, July 20

09:30 - 10:20
Martin Koerwien, Centre de Recerca Matematica
Absoluteness Considerations in $L_{\omega_1\omega}$, MS
10:40 - 11:30
Michael Rathjen, Leeds University
Ordinal Analysis for Powerset and the Existence Property, PS
11:50 - 12:40
Moritz Mueller, Centre de Recerca Matematica
Partially Definable Forcing and Bounded Arithmetic, CS

Guided visit followed by Conference dinner

Thursday, July 21

09:30 - 10:20
Philip Welch, Bristol University
Transfinite Machines, analysis and determinacy, CS
10:40 - 11:30
Ignasi Jane, Universitat de Barcelona
On Cantor's account of the distinction between sets and inconsistent multiplicities, HPS
11:50 - 12:40
Russell Miller, City University of New York Local computability and uncountable structures, CM

Lunch

15:00 - 15:50
Sam Buss, University of California at San Diego
Towards NP-P via Proof Complexity and Search, CP
16:00 - 16:30
Jesse Johnson, University of Notre Dame
Computable Categoricity for Uncountable Structures
16:40 - 17:10
Michael Lieberman, University of Pennsylvania
Category-Theoretic Foundations of Abstract Model Theory
17:30 - 18:00
Robert Lubarsky, Florida Atlantic University
Weak Weak Koenig's Lemma does not imply decidable fan
18:10 - 18:40
Stefan Vatev, Sofia University
Conservative Extensions of Abstract Structures

Friday, July 22

09:30 - 10:20
Joan Bagaria, ICREA - Universitat de Barcelona
Structural complexity, reflection, and topologies on ordinals, HPS
10:40 - 11:30
Tatiana Arrigoni, Fondazione Bruno Kessler
Sy Friedman's Inner Model Hypothesis. Philosophical and Foundational Reflections, HPS
11:50 - 12:40
Yijia Chen, Shanghai University
Consistency, Completeness and Optimality, CP

HPS = History and Philosophy of Set Theory
CM = Computations and Models
CP = Computations and Proofs
CS = Computations and Sets
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