Logic in Southern California
Caltech

Saturday, March 7, 2015
2:00 - 6:00 pm
Sloan room 151

Funded by NSF grant DMS-1044150

Schedule:

2:00-3:00 Peter Burton (Caltech)
3:15-4:15 Garrett Ervin (UCI)
4:15-5:00 Coffee Break
5:00-6:00 Siddharth Bhaskar (UCLA)

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Abstracts:

Peter Burton

Title: Structure on the space of actions modulo weak equivalence

Abstract: We discuss topological, convex and algebraic structure on the space of measure-preserving actions of a countable group modulo weak equivalence. We will define a natural Polish topology on this space and address the questions of how to represent its convex structure as induced from a Banach space and whether this structure forms a Poulsen simplex. We will also introduce a stronger (nonseparable) topology in which it forms a topological semigroup.

Garrett Ervin

Title: Linear orders that are isomorphic to one of their finite powers

Abstract: In the early 1950s, Sierpinski asked whether there exists a linear order that is isomorphic to its lexicographic cube but not isomorphic to its square. The analogous question has been answered for various other kinds of structures: it is known that there are groups that are isomorphic to their cube but not to their square (even countable ones), and similarly for modules, Boolean algebras, and Banach spaces. In this talk, I will show that if such a linear order exists, it is necessarily uncountable. I will also give a general characterization of structures X satisfying equations of the form A x X = X, and show how this can be used to construct structures that are isomorphic to their n-th power, for any n.

Siddharth Bhaskar

Title: Recursion versus tail recursion over abstract structures

Abstract: There are several ways to understand computability over first-order structures. We may allow functions given by arbitrary recursive definitions, or we may restrict ourselves to "iterative" functions computable by nothing more complicated than while loops.

In the classical case of recursion over the natural numbers, these two notions of computability coincide. However, this is not true in general. We ask whether there is a model-theoretic classification of structures over which iteration is as powerful as recursion.

In this talk I will discuss some conditions which affect this outcome one way or the other. I will also give a few examples of "intermediate" structures for which the question of recursion vs. iteration reduces to hard open problems in computational complexity.

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Directions and Parking:

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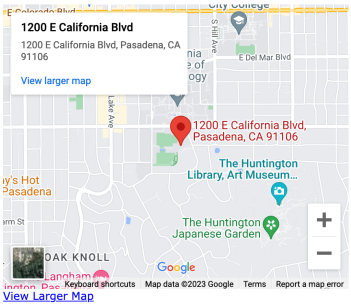

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Address:
1200 E. California Blvd.
Pasadena, CA 91125

Take a look at the Caltech campus map

There is free Saturday parking in underground structure **#126**. Feel free to park in any of the commuter spaces (these are marked by a red line).

Talks will be held in Sloan building **#37**, Room 151 on the ground floor

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Organizers:

Alexander Kechris (Caltech). Organizer Information
Itay Neeman (UCLA). Organizer Information
Matthew Foreman (UCI). Organizer Information
Martin Zeman (UCI) Organizer Information

Local Organizers:

Alexander Kechris (Caltech) Organizer Information
Andrew Marks (Caltech) Organizer Information
Jay Williams (Caltech) Organizer Information

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Earlier Meetings