

Logic Seminar

Relatively Random First-Order Structures

Henry Towsner (University of Pennsylvania)

Abstract: The Aldous-Hoover Theorem gives a characterization of those random processes which generate "exchangeable" first-order structures. A random first-order structure on the natural numbers is exchangeable if, after any permutation of the natural numbers, it has the same distribution. Although combinatorial proofs now exist, the original proof was model-theoretic: one views an exchangeable process as one given by sampling countably many points from an ultraproduct according to its Loeb measure.

For some purposes, full exchangeability is too strong. We investigate "relative exchangeability", where we only require that the distribution be preserved by automorphisms of a fixed first-order structure M . Depending on the amalgamation properties of the finite substructures of M , we obtain various generalizations of the Aldous-Hoover Theorem to this setting.

Tuesday, March 8 at 4:00 PM in SEO 427
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