Mathematics, Statistics, and Computer Science   **@ UIC**

Logic Seminar

Effective aspects of diophantine approximation

Jan Reimann (Penn State University)

Abstract: Diophantine approximation studies how well real numbers can be approximated in terms of rational numbers (or more generally, algebraic numbers). One measure of approximability is the irrationality exponent – the supremum of all numbers $r > 0$ such that there exist infinite many rational numbers p/q with $|x - p/q| < 1/q^r$.

Almost every number (with respect to Lebesgue measure) has irrationality exponent 2. In this talk, we present a new result that strengthens and effectivizes a classical theorem due to Jarnik and Besicovitch regarding the Hausdorff dimension of sets of reals with a fixed irrationality exponent.

Tuesday, March 15 at 4:00 PM in SEO 427