Speaker: Jan Reimann

Title: Effective aspects of diophantine approximation

Abstract: The theory of 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.