MANUEL FERNANDEZ, Georgia Institute of Technology
On the ℓ_0 Isoperimetry of Measurable Sets

The Coordinate-Hit-and-run (CHAR) walk is a type of random walk over a measurable set, where at each step a random coordinate of the current point is re-sampled. In a work of Vempala and Laddha, the authors gave the first polynomial bound on the mixing rate of the CHAR walk over convex bodies. As part of their proof strategy, the authors introduced the notion of the ℓ_0 isoperimetric coefficient of a measurable set and provided a lower bound for the quantity in the case of axis-aligned cubes. In this talk we will present some new results regarding the ℓ_0 isoperimetric coefficient of measurable sets. In particular we pin down the exact order of magnitude of the ℓ_0 isoperimetric coefficient of axis-aligned cubes and present a general upperbound of the ℓ_0 isoperimetric coefficient for any measurable set.