
THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Geometric Functional Analysis and Probability Seminar

Room 155 ,Ziskind Building
on Thursday, Dec 09, 2021 at 13:30

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Combinatorial diameter of random polytopes.

Abstract:

Given a polytope, we define the combinatorial diameter as the maximal shortest path (with respect to the number of edges we traverse) between any two vertices. Bounding the combinatorial diameter was motivated by the study of the simplex method. The polynomial Hirsch conjecture states that the combinatorial diameter of any polytope in dimension n with m facets should be bounded by a polynomial of n and m . We will discuss a class of random polytopes, generated by a Poisson point process on the sphere. We will see asymptotic bounds for the diameter, and compare it to other known bounds. Based on joint work with G. Bonnet, D. Dadush, S. Huiberts and G. Livshyts.