מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Geometric Functional Analysis and Probability Seminar

Room 155 ,Ziskind Building
on Thursday, Feb 28, 2019
at 13:30

DOUBLE SEMINAR

Fanny Augeri (WIS) + Elliot Paquette (Ohio)

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DOUBLE SEMINAR

Abstract:

Speaker 1: Fanny Augeri (WIS)
Title : Nonlinear large deviations bounds with applications to sparse Erdos-Renyi graphs.
Abstract: In this talk, I will present the framework of the so-called nonlinear large deviations introduced by Chatterjee and Dembo. In a seminal paper, they provided a sufficient criterion in order that the large deviations of a function on the discrete hypercube to be due by only changing the mean of the background measure. This sufficient condition was formulated in terms of the complexity of the gradient of the function of interest. I will present general nonlinear large deviation estimates similar to Chatterjee-Dembo's original bounds except that we do not require any second order smoothness. The approach relies on convex analysis arguments and is valid for a broad class of distributions. Then, I will detail an application of this nonlinear large deviations bounds to the problem of estimating the upper tail of cycles counts in sparse Erdos-Renyi graphs down to the connectivity parameter $n^{-1/2}$.

Speaker 2: Elliot Paquette (Ohio)
Title: The Gaussian analytic function is either bounded or covers the plane
Abstract: The Gaussian analytic function (GAF) is a power series with independent Gaussian coefficients. In the case that this power series has radius of convergence 1, under mild regularity assumptions on the coefficients, it is a classical theorem that the power series is a.s. bounded on open disk if and only if it extends continuously to a function on the closed unit disk a.s. Nonetheless, there exists a natural range of coefficients in which the GAF has boundary values in L-p, but is a.s. unbounded. How wild are these boundary values? Well, Kahane asked if a GAF either a.s. extends continuously to the closed disk or a.s. has range covering the whole plane. We show partial progress in establishing this in the affirmative.
Joint with Alon Nishry.