



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

Room 290C ,Ziskind Building  
on Thursday, Dec 21, 2017  
at 13:30

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CLT for small scale mass distribution of toral Laplace eigenfunctions

Abstract:

In this talk we discuss the fine scale  $L^2$ -mass distribution of toral Laplace eigenfunctions with respect to random position. For the 2-dimensional torus, under certain flatness assumptions on the Fourier coefficients of the eigenfunctions and generic restrictions on energy levels, both the asymptotic shape of the variance and the limiting Gaussian law are established, in the optimal Planck-scale regime. We also discuss the 3-dimensional case, where the asymptotic behaviour of the variance is analysed in a more restrictive scenario. This is joint work with Igor Wigman.