

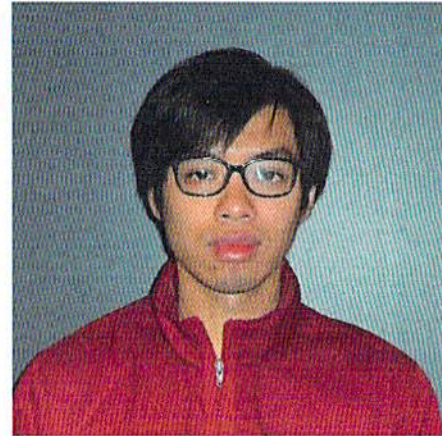
FELIX KLEIN SEMINAR

Speaker: Ching Wei Ho
Indiana University

Date: Thursday, February 27, 2020

Time: 2:00 PM

Location: 258 Hurley Hall



Lecture Title:

The large- N limit of eigenvalue distributions of sums of independent random matrices

Abstract

The “Ginibre ensemble” in random matrix theory consists of picking an $N \times N$ matrix Z_N at random, with entries that are independent, identically distributed Gaussian random variables with mean 0 and variance $1/N$. When N is large, the eigenvalues of such a random matrix follow the “circular law”: they will, with high probability, be nearly uniformly distributed on the unit disk. Suppose now we add to Z_N a Hermitian matrix X_N independent from Z_N whose eigenvalue distribution converges for large N to a compactly supported measure. In this talk, I will describe the large- N limit of the eigenvalue distribution of $X_N + Z_N$. The limit distribution is an absolutely continuous compactly supported probability measure on the complex plane. Inside the support, the density is constant along the vertical direction. I will also describe a multiplicative analog of these results.

