



## Mathematics and CS Seminar

# Central limit theorem for mesoscopic eigenvalue statistics of Wigner-type matrices

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Linear Eigenvalue Statistics (LES) are sums of test functions over the eigenvalues of a random matrix. Convergence of the empirical eigenvalue measure to a deterministic measure is equivalent to the convergence of LES to a deterministic quantity for any fixed (bounded continuous) test function. Furthermore, it can be shown that for suitable test functions, the fluctuations of LES around the deterministic limit are asymptotically Gaussian with a universal variance functional (hence the central limit theorem). In this talk, we address the central limit theorem for LES in the setting of Wigner-type matrices, a generalization of Wigner matrices whose limiting spectral measure is no longer semicircular. In particular, we analyze a two-point function of the resolvents, which emerges in the study of the characteristic function of LES, and a class of related two-point functions.

**Thursday, February 16, 2023 04:15pm - 05:15pm**

Mondi 2 (I01.01.008), Central Building



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