

Rate of convergence of empirical measures of hyperuniform point processes

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This talk is concerned with the empirical measure of a random point process in \mathbb{R}^d , such as the eigenvalues of a random matrix or a Coulomb gas. In several cases, this empirical measure converges towards a deterministic measure. In order to quantify the rate of convergence, we are interested in the p -Wasserstein distance between this random measure and its mean, particularly in dimension 2. We obtain a bound for this distance under some assumption on the p -th centered moment of the number of points in squares, which amounts to hyperuniformity when $p=2$. In addition, hyperuniform determinantal point processes will satisfy the required assumptions for any $p \geq 1$.

This is a joint work with Raphaël Butez (Université de Lille) and David García-Zelada (Sorbonne Université).

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