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Recent results on random matrices

Ciprian Tudor
University of Lille, Department of Mathematics

Abstract:

In this talk we discuss the asymptotic behavior of the Wishart matrix. If X is a $n \times d$ random matrix, then its associated Wishart matrix is defined by XX^T.

Besides the classical applications of Wishart matrices and multivariate analysis, they recently found applications to machine learning.

We are interested to understand the limit behavior of the Wishart matrix when $n, d \to \infty$, i.e. in the high-dimensional regime. This limit depends on the distribution and of the correlation of the entries of the initial matrix X. We will discuss several situations for these initial entries, all of them being related to the Wiener chaos.