

## Bernoulli Random Matrices

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The study of large random matrices, and in particular the properties of their eigenvalues and eigenvectors, has emerged from the applications, first in data analysis and later as statistical models for heavy-nuclei atoms. It now plays an important role in many other areas of mathematics such as operator algebra and number theory. Over the last thirty years, random matrix theory became a field on its own, borrowing tools from different branches of mathematics. The purpose of this lecture is to illustrate this theory by focusing on the special case of Bernoulli random matrices. Such matrices are particularly interesting as they represent the adjacency matrix of Erdos-Renyi graphs.