Pumagrass
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Speaker: Roger Van Peski
Title: Introduction to p-adic random matrix
theory

Abstract

In the 1980s, large computations of class groups of quadratic imaginary
number fields, together with heuristic arguments, suggested that the
distribution of a randomly-chosen class group was well-modeled (perfectly
modeled, in some asymptotic limit) by the cokernel of a random p-adic matrix.
This launched the study of random p-adic matrices, which continues to be an
active area. Interestingly, at a structural level there are many parallels with
the more classical theory of singular values of random real or complex
matrices. I will survey some of these results and analogies, and try to give a
sense of the general philosophy behind them. No knowledge of p-adic or real
random matrix theory will be assumed.