

BOULDER PROBABILITY SEMINAR

RANDOM MATRIX THEORY WHEN β IS AN EVEN SQUARE.

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For most well-studied ensembles of random matrices the joint density of eigenvalues is expressed in terms of a power of the absolute value of the Vandermonde determinant in the variables representing the eigenvalues. When this power, β , is equal to 1, 2 or 4 the marginal probabilities (more precisely, the joint intensities) can be expressed in terms of determinants or Pfaffians of certain matrices the entries of which are dependent on the specifics of the ensemble. After introducing the notion of a hyperpfaffian, I will show that when β is an even square integer that the normalizing constant for the ensemble can be written as a hyperpfaffian. I will then discuss what would be necessary to use this result to show that the marginal probabilities themselves can be written as hyperpfaffians.