

DETERMINANTS AND RANKS OF RANDOM MATRICES OVER \mathbf{Z}_m

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ABSTRACT

Let \mathbf{Z}_m be the ring of integers modulo m . The m -rank of an integer matrix is the largest order of a square submatrix whose determinant is not divisible by m . We determine the probability that a random rectangular matrix over \mathbf{Z}_m has a specified m -rank and, if it is square, a specified determinant. These results were previously known only for prime m .

COMMENTS

Only the Abstract is given here. The full paper appeared as [1]. For related work on random symmetric matrices, see [2].

REFERENCES

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1991 *Mathematics Subject Classification*. Primary 05A15, 15A52; Secondary 12C99, 15A03, 16A42, 16A44.
Key words and phrases. Random matrix, m -rank, singularity, determinant, ring of integers, Gaussian elimination.

Received 24 September 1985.

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rpb094a typeset using $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{T}\mathcal{E}\mathcal{X}$.