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Abstracts of Short Communications and Posters

Section:

12. Probability and Statistics

1991 MS Classification: 46, 60
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On the Law of Addition of Random Matrices.

Normalized eigenvalue counting measure of the sum of two Hermitian (or real symmetric) matrices A and B rotated independently with respect to each other by the random unitary (or orthogonal) Haar distributed matrix U (i. e. $A + U^{\dagger}BU$) is studied in the limit of large matrix order. Convergence in probability to a limiting nonrandom measure is established. A functional equation for the Stieltjes transform of the limiting measure in terms of limiting measures of A and B is obtained and studied. In the case of bounded supports of limiting measures of A and B this result was obtained by R. Speicher.

Reference: R. Speicher, Free Convolution and the Random Sum of Matrices, *Publ. Res. Inst. Math. Sci.* **29** (1993), 731–744