

Convolutions and fluctuations: free, finite, quantized

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The talk is about three operations on eigenvalues of self-adjoint matrices obtained from cutting out principal corners, adding and multiplying matrices. We discuss the asymptotic behavior of the operations as the size of the matrix goes to infinity, or as the dimension of the base field (beta parameter) goes to infinity, or in the quantized problem where matrices are replaced by group representations. The first one is classical, the third one is more recent, and the second one is very new. Each case leads to its own operation on measures and its own Gaussian fluctuation field.

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