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Title : The partial transpose of random matrices: old and new

Abstract : In quantum information theory, the partial transpose of a matrix is often used as a test for entanglement. Aubrun initiated the study of partially transposed random matrices, showing that Wishart matrices give asymptotically shifted semicircular distributions. Many results followed, some in connection to free probability theory. I will present an overview of the literature on the subject, as well as some new results in the case of random matrices supported on the symmetric subspace of a tensor product.