

On the negativity probability of the Wigner function

Starting from the Stratonovich-Weyl correspondence rules we show an $N-2$ parametric ambiguity for the Wigner-Weyl kernel for an N -level quantum system. These kernels are not only unitary non equivalent, but also induce different dimensional phase spaces, when performing Wigner transformation. Our results on the probability negativity of Wigner function for qubit, qutrit and the conditional probability of negativity at the a priori knowledge of separability are going to be presented.

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