Quantum Physics

An Experimentally accessible geometric measure for entanglement in N-qudit pure states

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We present a multipartite entanglement measure for N-qudit pure states, using the norm of the correlation tensor which occurs in the Bloch representation of the state. We compute this measure for important class of N-qutrit pure states, namely general GHZ states. We prove that this measure possesses almost all the properties expected of a good entanglement measure, including monotonicity. Finally, we extend this measure to N-qudit mixed states via convex roof construction and establish its various properties, including its monotonicity.

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