

Multipartite entanglement of random states

Monday 15 December 2025 12:12 (12 minutes)

In this talk, we will introduce the key differences between bipartite and multipartite entanglement in quantum systems. We will then show how quantum frustration emerges in multipartite scenarios, namely, situations in which a system cannot achieve globally optimal entanglement because different bipartitions impose conflicting requirements.

Next, we will consider various classes of random states in multipartite qubit systems to investigate their typical entanglement distributions. Special attention will be devoted to comparing these distributions across the different classes of random states, highlighting several unexpected and intriguing behaviors.

These findings contribute to the identification of the best classes of states for the study of multipartite entanglement and the investigation of quantum frustration.

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