

Phenomenology 2022 Symposium: From Virtual to Real



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II - Machine-Learning quantum entanglement with top quark pair production at the LHC

Tuesday 10 May 2022 14:30 (15 minutes)

We present the projections to probe quantum entanglement in top pair events at the LHC. We discuss a necessary and sufficient condition to define entanglement for the $t\bar{t}$ events, focusing on the dileptonic final state. This study scrutinizes the performance of different reconstruction algorithms, including some machine learning-based methods, in searching for entanglement. We show that $t\bar{t}$ momentum reconstruction is a crucial ingredient to accurately assess such measurement.

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Session Classification: Tools II